

I.D.E.A. SERIES



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THE INTELLIGENCE OF ACCEPTING IGNORANCE: *How the way we think, process information, and make sense of the world is both our greatest human strength and deepest human flaw*

The top headline of the June 11th, 2020 online edition of the Wall Street Journal read “Stocks Fall Sharply Over Virus Worries.” At first glance, this seems entirely appropriate as it succinctly describes and encapsulates the market events that day – the S&P 500 Index closed down -5.89% and the world continues to suffer from the global pandemic caused by the coronavirus. This type of headline is not abnormal; it is a banal and almost daily occurrence.

How often have we read something similar, though, without even a second thought about the veracity of the statement? Our innate instinct is to accept the premise on its face, especially given the credibility we lend to media outlets like the Wall Street Journal. But if we forced ourselves to work backwards through a logical process that would require supporting empirical evidence, would we still accept this headline as true? How do the journalists writing the article know for a fact that the market was down because of coronavirus worries? Did they perform a statistical poll of people who traded that day and found this to be the most common response? Why do we so effortlessly accept statements that lack any confirming data as true when, in reality, there are an infinite number of possibilities for why the S&P 500 goes up or down in any given day?

The reason is the power of narrative. Our human minds crave a narrative that weaves the threads of daily circumstances, random events, and accepted facts into a coherent cause-and-effect story that we can neatly take in, digest, and store away. This subconscious process allows us to instantaneously make sense of the world around us, to see a rational order in the constant bombardment of chaos that is the real world. It is perhaps one of our greatest evolutionary strengths because, without it, our brains would be overwhelmed by the chaos and we likely wouldn’t survive (at least mentally). At the same time, this protective mechanism can be our greatest flaw because it forces us to overestimate the



probability of likely events, while materially underestimating or ignoring the probability of unlikely events. But it is those low-probability, high-impact occurrences which can change our lives in ways that we could never fathom. It is the power of “Unknown-Unknowns” – events which we cannot predict, expect, or conceive of – that truly change the course of our personal and collective history.

In this edition of the I.D.E.A. series, we discuss how accepting our own ignorance and human limitations may be the most intelligent thing we could ever do as investors.

INTRODUCTION

The impetus for writing this educational piece is multi-faceted but incredibly foundational to our philosophy as investors. Put simply, it can be boiled down into three factors:

- i. Our industry, and those tangentially related, runs amok with so-called experts of prediction that hold themselves out as oracles with crystal balls. They are often trotted out to give their latest forecasts of where the world is going. All the while, their track record is never evaluated for their true skill or accuracy. We find it incredibly discouraging that so much weight and credence is assigned to their words as we believe it can be destructive for the typical individual investor. All the while the omnipresent disclaimer “past performance is not an indicator or guarantee of future results” is routinely ignored.
- ii. Our clients and others we engage with often ask us, “What is the market going to do this year?”, or something similar that begs a prediction. The simple answer is we don’t know because no one knows. It is impossible to foresee with any real conviction or accuracy. But the hubris and confidence with which forecasts are frequently made can be as dangerous as the predictions themselves. As investors, we must operate under the assumption that we do not know what lies ahead. Thus, we build and stick to an appropriate long-term plan (based on factual considerations), make adjustments along the way to risks we can see, accept and recognize when our biases are seeping into our decision making, and understand that this discipline gives us the best chance at success.
- iii. Lastly, is our current environment. With the world gripped by a global pandemic, we are now living through yet another low-probability, high-impact event. Since the turn of the millennium, we have experienced 3 such tragedies – the 9/11 terrorist attacks on the U.S., the Great Recession of 2008-2009, and the coronavirus. For low probability events, they seem to be happening quite frequently. We thought this piece might provide some insight on why that could be the case. As we will outline, our belief that such events are unlikely or rare is deeply flawed.

We want to emphasize that the concepts and ideas which we discuss throughout are not our own original ideas. From the opening example of newspaper headlines (Taleb, The Black Swan) on through to the end, we rely heavily on two schools of revolutionary work. The first, Nassim Nicholas Taleb and his book *The Black Swan*. Taleb’s works focuses on mathematical, philosophical, and practical problems with risk and probability, as well as on the properties of systems that can handle disorder. He spent 21 years as a derivatives trader and, after closing 650,000 option transactions and examining 200,000 risk reports, he changed careers in 2006-2010 to become a scholar, mathematical researcher and philosophical essayist. The second, the team of Daniel Khaneman and Amos Tversky, whose research on decision making under uncertainty resulted in the formulation of a new branch of economics, Prospect Theory. Among many other accolades, Khaneman was awarded the Nobel Prize in Economic Sciences in 2002 for his pioneering work integrating insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty. Much of this work was carried out collaboratively with Amos Tversky (Nobel Prizes are not awarded posthumously).

The cumulative work of these scholars, along with their collaborators, have been instrumental to the formation of our investment philosophy and process. Like any investor, however, an open mind is required in order to continue growing, learning, evolving, and adapting. But their ideas provide a sound framework off which to build and in which to operate; thus, we hope our clients find these topics interesting and illuminating to share.



THE FOOL'S ERRAND: HOW FALSE CONFIDENCE IN MODELS ONLY INCREASES IGNORANCE AND RISK

As a society, we justifiably celebrate and encourage technological development, scientific discovery, and advancements in academia. We reward these accomplishments with money, awards, and notoriety of all types. These incentives are inherently good as they can ignite a relentless determination and passion for arduous, years-long pursuits with often fruitless outcomes. As a result, the course of human history is changed for the better in some instances as once-unimaginable advancements make society more productive, healthier, safer, happier, or wealthier.

However, how we utilize and incorporate these tools into our daily lives is paramount to real world outcomes. The harnessing of nuclear power, for instance, can be leveraged as a cleaner energy source or as the most destructive weapon in history. As always, context is required to properly evaluate cost and benefits. So, we must force ourselves to question if it is beneficial, or even appropriate, to apply sophisticated models from the sanitized world of academic theory to our decision-making processes in the chaotic, random disorder of everyday life. The respective work of Taleb, Khaneman, and Tversky set out to do just that. They discovered that humans are not the rational, utility-maximizing automatons of the theoretical world and that attempting to find order in randomness with theoretical models is a fool's errand.

Let's take the famous Bell Curve as an example (academically referred to as the Normal or Gaussian distribution). Anyone who has taken an introductory-level statistics class will be familiar with its basic properties and shape. The further (or more standard deviations) that one moves away from the mean (average), the likelihood of finding such an occurrence within the measured population becomes ever smaller. In certain circumstances, this is a powerful statistical tool that can be used to describe a data set or characteristic of a population. When misapplied, however, it engenders a false sense of confidence and certainty that can be disastrous.

In *The Black Swan*, Taleb provides an illustrative thought experiment to visualize this concept, which can be easily used by anyone to evaluate the appropriateness of an applied model. It is summarized here:

From the section "Travels in Mediocristan," Taleb writes "Let's play the following thought experiment. Assume you round up a thousand people randomly selected from the general population and have them stand next to each other in a stadium... [Now] imagine the heaviest person you can think of and add him to that sample. Assuming he weighs three times the average, between four hundred and five hundred pounds, he will rarely represent more than a very small fraction of the weight of the entire population (in this case, about a half a percent.) ... You can get even more aggressive. If you picked the heaviest biologically possible human on the planet (who yet can still be called a human), he would not represent more than, say, 0.6 percent of the total, a very negligible increase (p.32)."

Continuing the thought experiment in the section "The Strange Country of Extremistan," he writes "[Then] consider by comparison the net worth of the thousand people you lined up in the stadium. Add to them the wealthiest person to be found on the planet – say Bill Gates, the founder of Microsoft. Assume his net worth to be close to \$80 billion – with the total capital of the others around a few million. How much of the total wealth would he represent? 99.9 percent? [Or] Suppose one randomly chooses a thousand authors and adds up the total number of books they have sold. Now, add the bestselling author in the world, J.K. Rowling, the author of the Harry Potter books. Her book sales will vastly exceed the total of the other thousand authors."

The point here is that the data set being measured is imperative to the validity of a model's application. If we are in Extremistan, inequalities are orders of magnitude greater such that the impact of an outlier – like Bill Gates or J.K. Rowling – can disproportionately affect the total. In Mediocristan, however, the impact of an outlier is insignificant relative to the total. He summarizes, "So while weight, height, and calorie consumption are from Mediocristan, wealth is not. Almost all social matters are from Extremistan. Another way to say it is that social quantities are informational, not physical: you cannot touch them (p.33)." Taleb's central critique of the Bell Curve – which he refers to as "That Great Intellectual Fraud" – is that it is often inappropriately and unjustifiably applied to quantities from Extremistan, such as market returns, economic growth, and geopolitical events.

Modern economics, finance, and investing have spent more than five decades incorporating and creating mathematical models that attempt to explain or predict their fields. Practitioners constantly seek out theoretical tools from math or science to reduce their uncertainty and inspire



confidence. While it may help to confirm their own estimation of their intellectual prowess, it adds no incremental skill in reducing real risks or predicting the future. This flawed logic is pervasive and not solely an unfortunate characteristic of the finance industry. A common term used in medicine (and referenced by Taleb as an example of such false confidence) is N.E.D. or "No Evidence of Disease." For example, after an oncologist performs a series of tests on a healthy patient and finds no tumors or cancerous cells, he/she celebrates that there is no evidence of disease. However, should the patient accept this result with confidence as a confirmation of their clean bill of health? As Taleb challenges, is No Evidence of Disease equivalent to Evidence of No Disease? In investing, as in medicine, the lack of evidence supporting the occurrence of an unlikely event does not imply that its probability, or risk, is zero. As more mathematical models are misapplied to finance and economics, the larger the collective blind spot gets and the more readily we accept that no risk resides outside our field of vision. As a result, the probabilities of unlikely events that can be identified are vastly underestimated, the probabilities of unlikely events which cannot be identified or fathomed are completely ignored, and the world is routinely shocked by the frequency of such occurrences – or Black Swans as Taleb referred to them.

Thus, it would seem, that the most prudent and logical thing we can do is accept the reality of great uncertainty while seeking out opportunities of positive Black Swans and preparing for the inevitable risks inherent to negative Black Swans. To paraphrase Taleb, for a positive Black Swan, you only have to be right once in a century to change your life forever; but for a negative Black Swan, you only have to be wrong once in a century to wipe out a lifetime's worth of value.

OUR MINDS ARE PLAYING TRICKS ON US: HOW BIASES IMPAIR OUR DECISION MAKING

After months of dealing with a global pandemic as well as the ensuing human and economic toll, it is apparent that we have failed to accurately predict the severity of COVID-19. In times of crisis, traditional models break down and uncertainty causes individuals to act irrationally. The effects of such sub-optimal choices can materially compound the risks of negative externalities. The team of Daniel Khaneman and Amos Tversky set out to study how humans make decisions under such uncertainty and discovered a multitude of innate human biases that lead us to misapply traditional models to real world events and think irrationally about risk. Developing from their work (known as Prospect Theory), arose the field of behavioral finance, which leverages the insights of psychological research to better understand the behavior and decision-making of investors with incomplete information. Armed with these insights, we hope to gain a better understanding of our own biases and improve upon our often-flawed decision making in portfolio management.

Behavioral finance, at its core, contradicts and detaches from the rational principles upon which traditional finance is grounded. In the same way, heightened uncertainty, emotions, biases, and conflicting information may cause investors to veer from rational ways of thinking and behaving that is in their own best interests. So, before diving into the principles of behavioral finance and the biases of investors, we must first define and understand the differences between the two fields. Traditional finance is far more rigid and theoretical than behavioral finance, relying on several key assumptions necessary for the accuracy of its economic models. The central assumptions: (i) individuals are risk-averse, rational decision makers; (ii) they consider all available information when making an investment decision; and (iii) markets are perfectly efficient such that all available information is already priced into the market. In contrast, behavioral finance violates all these assumptions of traditional finance in order to make it more applicable to real world situations. Behavioral finance allows for real world messiness and assumes that individuals may act irrationally, ignore certain information, and change their risk appetite between risk-aversion and risk-seeking depending upon the situation. Moreover, markets are not assumed to be efficient because investors do not possess all the available information necessary to being fully informed. The removal of these rigid assumptions allows for the incorporation of psychological literature into economic theory with the goal of gaining a more realistic view of how investors behave.

As a result, behavioral economists have found several unique cognitive and emotional biases pervasive in human decision making that can cause investors to make sub-optimal choices. To mitigate their effects, the first step is to gain a better understanding and awareness of our logical biases. From there, we can implement a set of systematic, disciplined strategies into the portfolio management process that may reduce the likelihood of making common mistakes.



INVESTOR BIASES

Loss Aversion Bias

One of the most prevalent biases among investors is Loss Aversion. First recognized by Kahneman and Tversky¹, it is based upon their work on Prospect Theory – formulated to explain how individuals choose between different prospects (or choices) and how they estimate the perceived likelihood of each of the choices. Loss-aversion bias suggests that losses are felt more powerfully than gains. For instance, individuals tend to suffer meaningfully more when they lose \$100 as opposed to the enjoyment in winning \$100. This suggests that investor utility is not as symmetrical as traditional financial models would have us believe.

An interesting example of loss aversion is the purchase of insurance. When purchasing property & casualty insurance, individuals are willing to experience small losses – in the form of premium payments – to guard against the possibility of a substantial loss. Even though the probability of a large loss is very small, people's strong aversion to losses will convince them to purchase insurance and lock-in small losses.

In a portfolio context, one significant consequence of this bias is the reduction of portfolio performance. Because investors have the tendency to avoid losses, they will have a strong inclination to sell winning investments too soon and not reap the full benefits of holding the outperforming asset. Similarly, they will hold onto losing investments for an extended period to avoid the pain of realizing a loss. As the old Wall Street adage goes, it is not a loss until the position is actually sold. Moreover, loss aversion will cause certain investors to avoid tax-loss harvesting strategies because of a desire to avoid locking in a loss, when, that loss can be beneficial from a tax perspective.

Two of the most important ways that investors can detect and overcome the inherent issues with loss aversion bias are to focus on the long-term and construct a clearly defined strategic asset allocation. Most of the problems associated with this bias tend to be the result of short-term thinking and a lack of focus on the long-term. Maintaining a disciplined approach to investing, coupled with clearly defined long-term goals will allow investors to potentially avoid losses in the short-term.

Confirmation Bias

Confirmation bias is the human tendency to seek out and notice information that confirms their preexisting beliefs, while overlooking or avoiding information that challenges their beliefs. When evaluating an investment, many investors will not seek out all available information about its merits, but instead, search for facts that support their inclination that it is a good/bad investment. Furthermore, investors will selectively remember details of an investment that uphold their current position while ignoring those which challenge it. A clear example of this is how the consumption of news and social media practices. Most people have a strong tendency to "follow" others on social media that share the same beliefs and values, while avoiding others with opposing views. It can be uncomfortable and upsetting for some to read the contradictory thoughts of others on a subject. Moreover, constantly consuming news, opinions, or information from other like-minded individuals allows one to hold on to and reinforce their static opinions, creating an echo chamber of sorts. An article in American Scientific finds, "the detailed advertising tools built into many social media platforms let disinformation campaigners exploit confirmation bias by tailoring messages to people who are already inclined to believe them. Also, if a user often clicks on Facebook links from a particular news source, Facebook will tend to show that person more of that site's content. This so-called "filter bubble" effect may isolate people from diverse perspectives, strengthening confirmation bias."²

Regrettably, it is rare for individuals to seek out contradictory information that opposes their ideas.

There are three prominent consequences associated with confirmation bias that cause investors to make sub-optimal decisions. First, investors fall into the trap of only considering positive information about an existing investment and disregard any negative information. This engenders a subjective and unrealistic view of certain assets, especially when an emotional attachment exists. For example, an investor maintains a large, concentrated position in the stock of their former employer because they believe in the company and are overconfident about its future prospects. As a result, one can be easily blind-sided by negative news because they refused to pay attention to obvious information that contradicted their opinion.

¹ Source: "Prospect theory: An analysis of decision under risk." *Econometrica*

² Source: "Biases Make People Vulnerable to Misinformation Spread by Social Media" *American Scientific*



The positive aspect of confirmation bias is that diminishing its effects is relatively straightforward. Although it might be uncomfortable for some individuals, seeking out information that challenges their existing views on certain investments is a very helpful tool. Fortunately, differing opinions across Wall Street are ubiquitous and accessible, no matter the investment or asset class. If you are bullish on an investment, read bearish research to gain a more objective view. It is helpful to be open minded and give credit to both sides where it is warranted. Then, objectively and unemotionally, make a more informed decision.

Be a skeptic, don't be too confident in your own opinion, and hunt for information that may prove your existing beliefs wrong.

Overconfidence Bias

Despite how easily we can fall prey to it, overconfidence bias is a relatively straight forward concept to identify; most people are overly confident in their ability to make optimal decisions. All too often, we have an unrealistic belief in ourselves and overestimate our knowledge and ability. This, in turn, leads to a false sense of control over our investments. In his book Thinking, Fast and Slow, Daniel Kahneman described the problem of overconfidence bias as, "A puzzling limitation of our mind: our excessive confidence in what we believe we know, and our apparent inability to acknowledge the full extent of our ignorance and the uncertainty of the world we live in. We are prone to overestimate how much we understand about the world and to underestimate the role of chance in events. Overconfidence is fed by the illusory certainty of hindsight."³

A prime example of overconfidence in the business world is illustrated by the rise and fall of Blackberry. Blackberry was once the premier smartphone for businesspeople all over the world and had gained massive market share with their physical keyboards and large screens. Businesspeople all over could be seen with this innovative and unique device that allowed users to send and receive emails from a mobile device like never before. At a certain point Blackberry owned roughly 50% of the smartphone market in the United States and 20% in the world.⁴ However, that all changed very rapidly in 2007 with the introduction of the first iPhone. At the time, Blackberry was overconfident in their product and did not believe the corporate world would embrace a more consumer-driven product like the iPhone. Unfortunately, they were massively wrong, and their overconfidence was the beginning of the end for the company. Fast forward to the end of 2016 and Blackberry's market share of the smartphone market had officially declined to 0.0%.⁵

The above example demonstrates the significant, value-eroding consequences of overconfidence. If we apply the concept directly to investing, overconfidence in certain investments can lead to poorly diversified portfolios and materially heightened risk as investors hold too large of a position relative to their total net worth. In the same way, individuals underestimate the true risk and overestimate the expected returns of certain strategies in which they feel most confident. Trading behavior can be negatively impacted as well when one is overconfident in their ability to outperform the market, leading to higher transaction costs and tax inefficiencies.

Humility is very important in investing and a great way to help mitigate the effects of overconfidence bias. Individuals should be objective when evaluating their past investments in order to understand where credit should be given to them individually but also to recognize the larger effects that were outside of their control. Although it can be painful, analyzing losing investments as often as winning investments is another way to reduce the effects of overconfidence bias and gain humility.

Recency Bias

Recency bias occurs when individuals overweight the importance of recent events and overstate their impact on future outcomes. Typically, investors use too small of a sample size of recent data and extrapolate this out to future investment decisions. Past experiences and historical data are usually ignored in favor of what is easily recallable to an investor's mind. When deciding to make a new investment, investors have the tendency to use information that first comes to mind and forget about more difficult to recall historical data, even though historical data may be far more pertinent to the decision-making process.

The main source of recency bias is our inherent focus on the short-term and our limited capacity to recall past events. As an everyday example, assess your own ability to remember the names of people you have been introduced to at a party. If you meet 15 new people at a gathering, research indicates that you will have greater difficulty remembering the first few individuals' names that you met. The last few people you met that night will typically be far easier to recall because of our brains' struggle to remember events further in the past.

³ Source: Kahneman, Daniel. Thinking, Fast and Slow. 2011

⁴ Source: "How BlackBerry went from controlling the smartphone market to a phone of the past." Business Insider.

⁵ Source: "Blackberry's Fall From Grace". Harvard Business School.



As a result of recency bias, individuals will tend to make changes to their investment portfolio based upon recent events and favor short-term outcomes as opposed to staying with their long-term plan. Oftentimes individuals chase the latest “hot” investment and eschew their strategic asset allocation. This could be seen with the historical run-up in the price of Bitcoin during 2017. Many investors found themselves buying into the upward trend as the price of Bitcoin reached a peak. However, in 2018, the price of Bitcoin collapsed, and many investors incurred significant losses as a result of overreacting to the recent price trend.

Objectively viewing both currently available information and past historical data with the same emphasis can reduce the effects of recency bias. Understanding that we have the tendency to place too much weight on recent events and incorporating more historical data into our processes may facilitate better outcomes.

Regret-Aversion Bias

Regret-aversion bias arises when an individual avoids making an investment decision because they’re fearful that the decision will turn out poorly. To avoid the feeling of regret, investors will simply maintain their status quo and favor inaction. As a result, current investments will be retained even though certain changes in the portfolio would be optimal. Similarly, some may tend to make an investment decision based upon whatever strategy is perceived to have the least potential future regret. If this occurs, decision-making is biased towards being too conservative. Even the father of Modern Portfolio Theory, Harry Markowitz, admitted to succumbing to this bias when he famously stated, “I visualized my grief if the stock market went way up and I wasn’t in it – or if it went way down and I was completely in it. My intention was to minimize my future regret, so I split my retirement plan contributions 50/50 between stocks and bonds.”⁶ This is a clear example of even a so called “expert” making an investment decision based upon avoiding regret and using a simplistic heuristic of dividing his assets 50/50 between stocks and bonds.

In addition to maintaining the status quo and making inadequate changes, individuals with regret-aversion bias also tend to participate in herding behavior. When investors exhibit herding behavior, they’re inclined to follow the most popular trends of specific investments or strategies that recently outperformed in order to avoid the regret of missing out. They might also avoid riskier investments that could potentially increase their expected return because of the fear of regretting the decision.

Client education is key to overcoming this bias. Because one of its worst symptoms is overly conservative portfolios, education can help clients understand the importance of risk and return tradeoffs. Being educated and informed about the value of diversification may help reduce risk and increase expected return.

OVERCOMING INVESTOR BIASES

1) Have a long-term investment plan in place

Too often investors find themselves focusing excessively on the short-term and ignoring their long-term view of the market. It is imperative to have a clearly defined strategic asset allocation to serve as a guide for your investment decisions. Creating and following a financial plan with a focus on achieving explicit goals will allow investors to ignore short-term market fluctuations, keep track of their long-term objectives, and to internalize discipline into the decision-making process that can guard against the sub-optimal choices arising from inherent biases.

2) Systematically rebalance your investment portfolio

Over time, as asset classes perform differently on a relative basis, it is inevitable that your current asset allocation will drift from your strategic asset allocation. To correct these differences and re-align your portfolio, it is advisable to, at a minimum, rebalance your investments quarterly. For example, a strategic allocation of 20% in US Equities might be allowed to temporarily drift 5% in each either direction. However, once that 5% level is breached, the portfolio should be systematically rebalanced back to the 20% level. This process will allow investors to sell assets that have outperformed and reinvest in ones that have underperformed. Having a strategic asset allocation – coupled with a systematic method of rebalancing – will mitigate the possibility of human error in portfolio rebalancing. Most importantly, avoid short term market-timing or trend-following at all costs.

⁶Source: “Investing Experts Urge ‘Do as I Say, Not as I Do’” The Wall Street Journal.



3) Ask for educational resources from your advisor to become a more informed investor

At Aaron Wealth, we firmly believe in client education. In our view, a more informed client will be more adept at effectively recognizing and mitigating some of the inherent biases to which we are all susceptible. As individuals become more informed and involved in the investment process, they reduce the likelihood of making emotional and irrational decisions as well as becoming their own best advocate.

4) Do not check your investment portfolio too frequently

While the advances in technology have made it much easier to stay informed about your portfolio, this can also be a double-edged sword. In today's world, it has become extremely simple to constantly check your portfolio performance on-the-go and at your fingertips. However, this may lead to a heightened focus on short-term market fluctuations and increase the likelihood of succumbing to emotional biases. Moreover, continually monitoring your investment portfolio might result in the rapid expansion of trading frequency – compounding the negative effects of transaction costs, tax inefficiencies, and suboptimal decisions. Determining a predefined schedule for portfolio reviews, on a monthly or quarterly basis, can help to avoid this pitfall. Client access to on-demand account information is paramount to transparency and trust, but it behooves all investors to maintain a focus on their longer-term goals and objectives.

5) Avoid making emotional decisions

One of the most difficult aspects of investing is detaching your financial decisions from your emotions. Making swift investment choices during periods of panic or exuberance will only lead to an increased risk of exhibiting the above behavioral biases. It is important to be aware of how we are feeling emotionally and where things stand objectively before making any changes to a portfolio.

CONCLUSION

For all the modern advancements in the fields of risk management and the decision sciences, a detrimental, if unintentional, drawback has been an overreliance on viewing the world as "thin-tailed" (Thin-tailed distributions assume that low probability events are vanishingly small while fat-tailed distributions assume that low probability events are more likely). Innate human biases coupled with the misapplication of clean, theoretical models to real world chaos only exacerbate this flawed logic. Global economic, market, and geopolitical events are inherently fat-tailed and disorderly, belonging to the realm of Taleb's Extremistan. Our world, from the course of history to investment returns, is dominated by low-probability occurrences, whether we can identify them or not. So why do we continually narrow our views to fit into neat, orderly models? This cognitive dissonance is likely symptomatic of the human desire to feel control over our circumstances and bring order to our chaotic surroundings. When it comes to investing, better outcomes are predicated on acknowledging the reality of fat tails and overcoming our biases. By understanding our limits and accepting the statement "I don't even know what I don't know", we can begin to make better, more optimal decisions in the management of risk and our financial lives.



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