Think again! Your guide to the cognitive biases that lead to bad investing behaviours and the 10 things you can do about them.

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Investors often exhibit innocent, but irrational behaviours that threaten to thwart even the best laid financial plans. These “cognitive biases,” systemic errors in thinking that can impact our judgement, is deeply rooted in the human mind. In this whitepaper, we discuss the many investing-related biases that impair our financial decision making. We also offer some simple ways to enhance the objectivity of the investment process and lessen your susceptibility to the biases that impair good judgement. Continued...
Much work in the field of behavioural finance is focused on “cognitive biases” – systemic patterns of irrational judgement that seem deeply rooted in the human mind. Some of these biases may have evolved as mental shortcuts that helped our ancestors survive dangerous environments; but, left unchecked to influence our investing decisions, today they are shortcuts to losing money.

As with many destructive human impulses, the first and most important step on the road to controlling them is to recognize their existence. By some counts, there exist dozens of cognitive biases (one online codex lists more than 180 biases grouped into 20 broad categories, although many are arguably better labeled as logical fallacies). Few of these exist in isolation. There are deep interactions between some, others overlap, and certain biases even directly contradict others.

Part one of this paper will introduce you to the cognitive biases most commonly found in investing; however, researchers have clearly shown that simply knowing about a bias isn’t sufficient for most individuals to overcome it. And while a lot has been written identifying and describing biases, little has been written about overcoming them or finding remedies. Part two suggests simple steps you can take to enhance the objectivity of your investing process and lessen your susceptibility to the biases that impair good judgement.

**Biases commonly found in investing**

**Anchoring**

Michael Lewis, the renowned popular finance writer (*Liar’s Poker, The Big Short*), wades into behavioural finance with his latest book, *The Undoing Project: A Friendship That Changed Our Minds* (W.W. Norton & Co., 2017), telling the story of Daniel Kahneman and Amos Tversky, the two Israeli psychologists regarded as the founding fathers of the field (Kahneman received the 2002 Nobel Prize in Economics for his work).

Early in the book, Lewis retells an anecdote from Daryl Morey, General Manager of the Houston Rockets, recalling an executive education class at Harvard Business School. Morey said the professor in a behavioural economics session asked everyone in the class to write down the last two digits of their cell phone number on a piece of paper. Then they were asked to write down their best estimate of the number of African countries in the United Nations. The results demonstrated that students with higher phone numbers gave systematically higher estimates for the number of countries.

Similarly, researchers have shown that after writing down the last two digits of social insurance numbers, people with higher numbers tended to bid up to twice as much as their low number counterparts in a mock auction. This is called “anchoring” – the over-reliance on the first piece of information you hear and the ability of that first information to frame further thinking. It is the phenomenon behind the widely accepted wisdom that in a salary negotiation, whoever makes the first offer establishes the range of reasonable possibilities in each person’s mind.

Anchors are everywhere. Anytime you are presented with a number – by real estate agents, car salesman – you are being anchored.

Anchors are especially omnipresent in investing: analyst price targets, recent price ranges, high water marks, moving averages, and the strongest one of all: your buy price! All these numbers and others can influence your perception of an investment’s fair value.

Because the analysis required to determine something’s intrinsic worth is difficult and time consuming, investors are dangerously over-reliant on anchors. Even stock

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analysts are often anchored by their previous ratings and price targets in making ratings changes. It is much easier to re-rate a stock relative to your previous position than to re-start your fundamental analysis from scratch and come to a new, clean decision.

Lewis’s recounting of Morey’s cell phone/African countries tale harbours another disturbing revelation. After the professor showed the class the results and explained the bias being demonstrated, she had them repeat the exercise with a different sample question. It produced similar results. Knowing about the bias wasn’t sufficient to overcome it.

Confirmation bias and commitment bias

Confirmation bias is perhaps the most widely recognized cognitive bias, not just in investing behaviour, but throughout our lives (and especially true in conversations about politics.) This is the tendency to give too much weight in our decision-making to information that supports our preconceptions, and to discount information that is not supportive.

In the extreme, one can settle on an opinion and then arrange the available evidence to support that opinion. In many areas of scientific inquiry it has been shown that scientists will often discount anomalous data, or modify their theory just enough to accommodate it, rather than be open minded to the possibility that data anomalies call the underlining concept into question. Investors are no different. How often do we point to (and cling to) valuation measures that support our decision to hold a particular investment, while dismissing those that argue it is time to sell?

Interestingly, the more you have made others aware of your decision (e.g. to buy a particular stock) the more likely you are to resist changing your opinion. This suggests that professional investment analysts are at even more danger of falling victim than are individual private investors. This related phenomenon of being extremely resistant to changing your opinion, even in the face of overwhelming evidence, because you have publicly put yourself on the line, is called “commitment bias.”

Clustering illusion

If the price of your favourite stock goes up 15 days in a row, are you more likely to attribute that to random variation or will you think something else is going on? The fact is, any sufficiently large set of data (and stock price movements certainly fit the bill) will display random patterns that look anything but random. A long enough string of random ones and zeros will have strings of consecutive ones within it hundreds of characters long. This concept is popularly expressed in terms of monkeys at typewriters eventually producing Shakespearean sonnets.

The tendency to see patterns in random events is called the clustering illusion. It is the same effect as experienced when looking at the night sky and immediately seeing some stars as belonging together (e.g. the Big Dipper). Sometimes this is referred to as the “sharpshooter” effect, an allusion to pulling patterns out of data and then “painting targets” around them post hoc.

The clustering illusion is the source of many gambling fallacies. If red turns up on a roulette wheel a number of times in a consecutive string, people tend to feel it is more likely to turn up again. Interestingly, the most commonly cited gambling fallacy describes exactly the opposite. In a random pattern of coin flips, most people know heads and tails are equally likely to come up and that this tendency is likely to be expressed over a large number of flips. Yet if a string of flips delivers consecutive heads, people are more likely to think the next flip will land tails, as if the coin is somehow under pressure during each flip to express reversion to the mean. But no matter how many heads are flipped in a row, the odds on each next flip are always going to be 50:50.

This is an important concept to keep in mind when watching stock price movements, which, while perhaps trending up or down over time, famously tend to follow a “random walk” from tick to tick. Just because the last few
ticks (or days) were up or down, does not necessarily imply anything about the likely direction of the next move.

In spite of everything we’ve just discussed, sometimes recent price movements can drive subsequent trading. This forms the underpinnings of much of “technical analysis” and is the foundation of “momentum investing,” and it brings us to our next bias.

Recency
Momentum trading is a special manifestation of “recency.” In more general terms, recency is simply an illogical tendency to give more weight to the latest information received, and less weight to older data (and in that sense is the opposite of anchoring).

Sometimes a recency-driven approach to decision-making is believed to be warranted by the circumstances; and indeed, how often have you heard investment professionals declare “this time it’s different.” But just as with the anchoring effect, recency comes down to letting our decision-making be biased by the order in which information is presented to us.

Perhaps these serial position effects arise because the order in which information is presented affects our ability to remember it. Some of us find it easier to remember the last numbers in a list (recency), others the first (anchoring or primacy effect). Investors who succumb to recency tend to extrapolate the current trend and begin to believe the market will always look the way it does today. This quickly leads to unwise decisions such as overweighting recent winners rather than rebalancing a portfolio that has become dangerously under-diversified.

Availability bias
Rather than focusing on the first information available (anchoring) or the last information received (recency), some people rely overly on whatever information is immediately and easily available. This is like firmly believing that smoking is not unhealthy because you happen to know someone who lived to 100 despite smoking three packs of cigarettes a day.

The “availability bias,” or availability heuristic, might be thought of as just poor due diligence, a reluctance or disinterest in undertaking appropriate research. This reluctance to research when it comes to choosing investments may be due to the number of options there are to choose from. With not just thousands of potential stocks, but thousands of potential mutual funds on offer, no individual can be expected to research each one. Investors therefore tend to consider only the stocks and funds that come to their attention, whether that be from their advisor, friends, financial media or social media.

There are likely many aspects of life where blindly accepting simple cues to make decisions is not harmful, and so speeding up the process or avoiding hard thinking is perfectly benign. However this is not true when it comes to your savings. The dangers of impulsively buying a fund because you saw an advertisement on television or heard about it from a friend don’t need to be belaboured. It is especially inexcusable when tools are readily available to you and your advisor to make informed decisions.

Unfortunately, the more effort we put into researching our investment decisions, the more we put ourselves in danger of our next bias.

Endowment bias and choice supportive bias
Also called the “status quo bias” or “mere ownership effect,” the endowment bias describes how people are prone to systematically overvalue something they already have. Mere possession of something, including an investment security, is enough to endow it, in the eyes of the possessor, with unreasonably higher value than is perceived by a non-owner.

Again turning to basketball in his recent book, Lewis recounts how Morey, after rigorous analysis, came to realize that the management team of the Rockets unreasonably overvalued their point guard, Kyle Lowry,
when evaluating an offer from the Toronto Raptors to trade for a first-round draft pick, compared with how they would have valued Lowry if considering a trade to acquire him.

Lewis also describes another experiment by psychologist Daniel Kahneman where half of a graduate class was given a college-themed mug and invited to trade with the other half of the class. Very little trading occurred because the valuations set by the mug-possessors far exceeded those set by the mug-less.

Investors are told not to “fall in love” with a stock or fund. Every security in a portfolio should be re-evaluated on a regular basis with your advisor. But overcoming the endowment bias is made more difficult because your possession of an investment is a result of your own choice. The “choice-supportive bias” refers to your tendency to feel positive about something because you have chosen it, even when the flaws in that choice become apparent. Do you still think your dog is awesome even if he occasionally bites people? We tend to overvalue investments and then hold onto them longer than we should, reluctant to sell because of the effort we’ve expended in the decision.

And if you value something more just because you already own it, imagine how much more strongly you might feel if you also built it. The idea that people value something more if they make it themselves (no matter how worthless their creation really is) is playfully referred to as the “IKEA Effect” (for a certain demographic this might just as readily be called the “Build-a-Bear Effect”). How is this relevant to investing? Many investors (and advisors) think their home-built portfolios are better than those created by investment professionals who use sophisticated qualitative tools, massive data resources and modern portfolio theory; yet they wouldn’t expect to beat a professional basketball player, who trains relentlessly for his craft, in a pickup game.

Optimism bias and overconfidence

Many psychologists believe optimism is evolutionarily programmed or hardwired into us. If we didn’t generally believe things were going to work out, it would be rather difficult to get out of bed most mornings. Optimism and its cousin, confidence, propel us forward each day; but there is such a thing as being too optimistic. We smoke but think we won’t get cancer. We text while driving, confident we won’t get into an accident. And we don’t plan or save adequately for retirement, assuming everything will somehow magically turn out ok.

Many of us are also too confident in our own abilities. We tend to overrate our knowledge and skill. It is said 80% of drivers think they are above-average drivers. Similarly, most investors think they are above-average investors. This is sometimes known as the Lake Wobegon Effect, referring to Garrison Keillor’s fictional town in his Prairie Home Companion radio broadcasts, “where all the women are strong, all the men are good looking, and all the children are above average.”

Overconfidence causes us to take greater risks. It makes us tend to trade more often and fail to appropriately diversify our portfolios.

Each year, Dalbar, Inc. publishes a study titled Quantitative Analysis of Investor Behaviour (QAIB). The study regularly shows that mutual fund investors massively underperform not just the market (partly due to fees), but also underperform the funds in which they invest. The gap between fund returns and returns experienced by fund investors is routinely many hundreds of basis points (e.g. 300%-500%). Dalbar attributes this gap to terrible investment decisions and labels it the “investor behaviour penalty.” Active trading causes subpar performance. Sometimes the active trading looks like performance chasing, but much is simply driven by overconfidence.
Studies by Brad Barber and Terrance Odean (Online Investors: Do the Slow Die First?, Review of Financial Studies, 2002) and Markus Glaser and Martin Weber (Overconfidence and Trading Volume, University of Mannheim, 2004) showed overconfident investors tended to trade more online, and the more confident the investor, the more they traded. Furthermore, Barber and Odean found that once online, the illusion of control and the illusion of knowledge further increased investors’ overconfidence. “Overconfidence led them to trade actively and active trading caused subpar performance.”

Hindsight bias and attribution bias

Hindsight bias is the tendency to rewrite our history to make ourselves look good. Investors misremember the information and decision-making processes that led to an investment, and people consistently misremember forecasts and predictions in ways that make them look smarter. Hindsight bias is everywhere in the financial business. How many pundits actually predicted the 2008 financial crisis, and yet how many today will easily explain why it was all so obvious?

There is a strong bias to believing that events that have already occurred were more predictable than they actually were before they took place. If, in hindsight, an outcome looks like it was inevitable, we tend to think it was therefore predictable.

In The Black Swan: The Impact of the Highly Improbable (Random House, 2007), Nicolas Taleb illustrates the point by describing how an analysis of writings and events prior to World War I shows an almost universal lack of understanding among politicians, soldiers, and investors, of what lay ahead. Yet popular discussion today of the war and its preceding years often emphasises its obvious inevitability. Psychologists attribute this to the human mind having an easier time storing in memory and later accessing something that actually did happen, rather than something that didn’t. Looking back at events, it then becomes difficult to imagine alternatives, even if those alternatives were what was expected at the time.

Attribution bias is a close cousin of hindsight bias. When an event or an investment decision unfolds as we thought it would, we are quick to attribute the favourable
outcome to our skill, knowledge or intuition. But when things do not turn out so rosy, we tend to blame outside causes over which we had no control.

The danger of both hindsight bias and attribution bias is that they hinder the ability to learn lessons after making mistakes. If we can’t accurately and effectively review our past decision-making, we can’t make revisions or corrections to that process, and we certainly won’t acquire the humility required to avoid overconfidence in future decision-making. We have no incentive to adjust our behaviour if we constantly think we are doing okay.

An alternative consequence that can arise from hindsight bias is regret. If we erroneously believe the past was more predictable than it actually was, we run the risk of mistakenly thinking we should have been able to do better. This kind of regret can lead investors to give up and stop investing altogether.

Outcome bias
Outcome bias is the process of judging the wisdom of a decision based on its outcome, rather than on how the decision was made at the time it was made. Just because you made a lot of money on your trip to Las Vegas does not mean your gambling was a smart decision. Although similar to recency bias, the important distinction is that recency relates to unduly focusing on the latest information as an input to a decision, whereas outcome bias is the process of unduly focusing on the latest information (i.e. the outcome) in evaluating that decision after the fact. Like hindsight and attribution biases, outcome bias is dangerous in that it contributes to overconfidence and possible reckless behaviour in future decisions.

What you can do about them?

Ten ways to overcome cognitive biases
In 2012, Kahneman addressed delegates at the CFA Institute’s annual conference where he was asked what could be done to overcome behavioural biases.

“Very little,” he replied. “I have 40 years of experience with this, and I still commit these errors. Knowing the errors is not the recipe to avoiding them.”

Financial writers often say there is very little written about what we can do to overcome biases because there isn’t a lot we can do. But that’s not true. Let’s look at some of the ways you can avoid these obstacles to rational thinking and invest more wisely.

Educate yourself. Do your homework.
Although listing biases was the domain of part one of this paper, we’ll begin part two by identifying yet one more: the blind spot bias. It has been shown that most people notice cognitive (and other) biases much more readily in others than they do in themselves. In other words, failing to recognize your own biases is a bias in itself. The thought is that “Everyone else behaves irrationally, but not me.”

In 1974, Nobel Prize-winning physicist Richard Feynman gave a commencement address at Cal Tech where, in describing the importance of a careful and consistent process to root out error in a scientific process, he could easily have been referring to investing: “The first principle is that you must not fool yourself – and you are the easiest person to fool.”

Education is an important tool in overcoming blind spot bias; so, congratulations! You’re on your way. Reading articles like this one, or books like Lewis’s The Undoing Project, makes you less likely to deny that bias may exist in your own behaviour and attitudes. You may even start to recognize it; for example, seeing your excessive trading as a sign of overconfidence. You are then more likely to adopt some of the other practices listed here to try to correct or mitigate it.

Acquiring as much relevant information as you can before making decisions is an obvious step towards avoiding all the selective perception biases, including availability, anchoring and recency. Biases often arise because, when
faced with a lack of adequate relevant information, your brain latches onto whatever it encountered first, most recently, or most easily, defaulting to something simple and familiar. The obvious solution to overcoming this tendency is simply to seek out facts before making decisions and to take your time. Remember, most biases exist as mental short cuts. If we take more time to analyse, we are less likely to fall back on the biased shortcut.

A good place to start might be learning about the long-term performance trends of various asset classes. In addition to putting limited recent data or anchors into more accurate perspective, this can help you set realistic expectations for your investment plan as a whole.

Don’t chase trends. Don’t attach too much significance to short-term results.

Chasing performance is just a manifestation of recency bias. Following the herd rarely pays off and is often the best way to risk buying at the top. If there truly is a fundamental reason why a particular stock or fund has experienced a “string of heads” (to put it in the terms of the clustering illusion and gamblers’ fallacy), recognize that players with far greater resources than you have likely identified the pattern or tendency and exploited it long before you came along.

Most astute investment professionals actually suggest just the opposite – be a contrarian. As Warren Buffet advised, “be fearful when others are greedy, and be greedy when others are fearful” (Buy American. I am., New York Times, October 16, 2008). And remember there is a reason all mutual funds come with the disclaimer “past performance is not indicative of future results.”

In assessing your existing portfolio, remember it has been crafted with your advisor to achieve specific goals and objectives over a reasonable period of time and to take on no more than an appropriate level of risk. It reflects your personal specific liquidity requirements, tax considerations, risk tolerance, income needs and return expectations. It makes no sense to blow it up over short-term fluctuations. Don’t become obsessed with checking your portfolio too often. The more often you look, the more likely you are to see a short-term loss.

When assessing your overall investment plan, as well as any asset allocation product or program within it, remember your overall result is likely to be below that of the best-performing asset class in any given short-term period. One of the goals is to dampen volatility and reduce risk through asset class diversification, a benefit that should be assessed over a sufficiently long time period. Investing for the long term establishes a long time frame of reference and diminishes the importance and influence of anchors.

Seek out alternative scenarios.

Avoiding confirmation bias requires you to consider contrary opinions or differing viewpoints, and then realistically give weight or probability to them.

It may be helpful to try being your own “devil’s advocate,” arguing the other side’s case. Whatever the issue, aim to understand, be able to articulate, and maybe even appreciate other points of view to clarify your own thinking. In order to seek out contrary opinions, it is important to “get out of your bubble.”

One idea is to use decision trees. Plotting out your decision-making process and thoughtfully identifying each step where you confronted a choice forces you to consider at least some of the alternative scenarios, and thus can be effective in mitigating confirmation bias.

Mistrust any conclusion drawn from selective data.

The smaller the information set employed in your decision-making, the more likely you are to fall victim to the clustering illusion, as well as availability bias. Seek out as much relevant information as you can; but be watchful for the possible influence of these biases within the information that you acquire from others.
When considering opinions, recommendations, or research conclusions from others, be they from market analysts, friends, financial journalists, and even your financial advisor, try to examine the depth of research behind them.

**Keep an investment log.**

Keep a detailed log of investment ideas. Track your personal hits and misses; but just as importantly, log the ideas you didn’t act on as well as those you did. By continually revisiting your past investment decisions considering the information you had at the time rather than any new information, you can better understand what was and is driving your investing behaviour.

By keeping track of your mistakes, you might better identify whether those mistakes were due to bad luck or due to an error in your process that can be corrected. You’ll probably quickly find the log is a collection of views you no longer hold.

**Don’t react to noise.**

Reacting to noise is perhaps the most egregious manifestation of availability bias. Remember that anything you encounter in the media is just one data point. Don’t contemplate reacting until that data point is only one among many carefully considered others. You might even consider avoiding daily financial news on television. Keep in mind that television depends on viewership ratings and often deliberately tries to evoke emotions in order to get those ratings. Many segments and on-air commentaries are designed to excite or incite, not to educate. If and when you do contemplate reacting, remember what we said earlier about excessive trading giving rise to the investor behaviour penalty. Talk to your advisor, take some of the emotion out of your reaction, and together you are likely to employ better judgement.

**Trade less.**

Trading is a negative sum game. Every trade has a winner and a loser. Both think they are going to win so one has to be wrong – a clear sign of overconfidence in at least one party. Also, after fees, commissions, spread, etc., the net is negative, so rational investors don’t trade too often.

Most investors trade too much and damage returns doing so. For a fuller discussion of why you should resist the urge to trade and let time be your friend, see Investors Group’s recent white paper *Time in the market, not timing the market, is what builds wealth* (IG Investment Strategy Group, April 2017).

Beyond the investor behaviour penalty described earlier, understand that when you try to time the market, you are trading against computers, institutional investors and other players with more experience, better data, and other advantages (after you’re done with The Undoing Project, pick up another of Michael Lewis’s books, Flash Boys: A Wall Street Revolt (W.W. Norton & Co., 2014)).

**Use trading rules.**

If you do trade, one way to take emotion out of the equation is to use trading rules. Develop a set of rules or algorithms for your decision-making in advance and try to apply them dispassionately. No matter how deeply you research a potential investment, chances are you will never have complete information or certainty. Cognitive biases and rules of thumb are simply ways your brain attempts to overcome complexity and uncertainty. So if you are going to fall back on rules of thumb, why not make them ones based on criteria such as profitability or financial stability (e.g. sell if profit margins dip below a certain threshold), rather than on emotional considerations such as loss aversion relative to a buy price “anchor.”
Don’t go bragging about your great stock and fund picks.

Be proud of the positive results achieved with your advisor in your investment plan; but try to refrain from crowing about your winners to family and friends. We’ve seen how the endowment bias and choice-supportive bias inhibit rational judgement when it comes to evaluating investments already owned. Broadcasting your choices only enhances the emotional investment that results in commitment bias, and thus inhibits your ability to rationally re-evaluate those choices later. If you are proud of the results of your investment plan, why not instead recommend to your friends and family the services of the investment advisor who helped you thoughtfully and rationally achieve those results. That’s something you can really feel proud of.

Use your advisor.

Investment planning offers an easy remedy to blind spot bias: employ someone else to watch for biases on your behalf. A financial planner is your impartial second set of eyes, helping to counter all of the biases listed above and perhaps more. Regular reviews of your investment plan with your advisor builds a feedback mechanism into your investing decisions. An advisor can help you set realistic return expectations, arguably “anchors” themselves, but anchors grounded in fundamental and relevant data.

Similarly, your advisor can help you take advantage of resources to allow knowledgeable and wise decision-making, to overcome the biases of recency and availability.

Working with an experienced advisor, you add objectivity and an independent perspective to your financial plan (a plan crafted to be specific to your needs.) Decisions reflecting overconfidence, commitment, hindsight, attribution, endowment, and other biases have a harder time passing scrutiny when subjected to clearer thinking from third-party observers who are not emotionally tied to the investments. And partnership with your advisor is an effective way to discourage the active trading that results in the “investor behaviour penalty,” helping you stick to the plan.

Even the very act of thinking about, discussing and planning for your retirement can help mitigate the overconfidence and optimism bias that sometimes hinders people from saving adequately. Itemizing and projecting your financial needs in retirement can lead to increased recognition of how much money is truly needed to make that retirement comfortable and can be an effective tool to convince you of the need to save and invest now. Talking regularly to your advisor can mitigate the risk of falling prey to cognitive biases and help keep your savings on track.