While most of us are naturally more comfortable hearing information which confirms our current beliefs, the necessity to seek contrary information enables us to be more informed and make better decisions. As you'll see in this article, the trouble with confirmation bias begins when it gets in the way of seeking out **facts**.

Mary Jane Conway-King

"People like to be told what they already know… people think they want news, but what they really want is olds… not news, but olds, telling people that what they think they already know is true."

The Truth: A Novel of Discworld
by Terry Pratchett

Prove Yourself Wrong

by: Sheila Julien, Senior Associate

Maybe it is nature's way of keeping us on our toes. Maybe you've been smart, data-driven, and successful all your life and then… data supported a decision you knew to be the right one, but you did not get the outcome you expected.   Perhaps you are skilled at judging candidates, then you make a bad hire. You find an exciting investment like the winners you have spotted before, and it yields mediocre or poor results.

With experience comes wisdom... and confirmation bias.

Not that a great deal of experience is required for confirmation bias to develop — a simple pre-existing opinion can easily distort the way our minds absorb confirming and contradictory information. Confirmation bias is the tendency to pursue and embrace information that matches our existing beliefs. We tend to seek out and enjoy people who write or say exactly what we think. We gravitate toward these sources not for information but for confirmation. Political polarization and punditry are fruits of confirmation bias. Researcher and writer Thomas Gilovich posits the "most likely reason for the excessive influence of confirmatory information is that it is easier to deal with cognitively." It's easier to think what we think!

Yet confirmation bias in business is especially hazardous to highly experienced and successful individuals. These minds are adept at spotting patterns, learning from experience, scanning the horizon and connecting the dots. If that describes your talents, check out this classic puzzle nicely presented by the "The Upshot.": A-quick-puzzle-to-test-your-problem-solving.

In this puzzle, you are given a pattern and you need to determine the underlying rule. Participants come up with a theory about what the underlying rule is and they test it as often as they like. We overwhelmingly look for patterns that support our theories rather than looking for data that would clue us in that we have missed the mark. And with each piece of data that does not refute the theory, we become more confident. This exercise shows how people work to prove their theory right, instead of robustly testing it. In science, a hypothesis is not considered sound unless it is falsifiable, and not well vetted until attempts to prove it wrong have failed. But once we have seen enough supporting evidence to confirm we are right, it is far more natural for us to fully embrace the idea.

This challenge is not unlike when we want to determine the root cause of defects or errors. A basic problem solving method is to generate ideas about possible root causes (perhaps using a simple fishbone diagram) and then to systematically test these ideas to determine which ideas are supported by the data and which are not.

For instance, is the work done less well by inexperienced employees, or when the machine is overdue for maintenance, or when the materials have a certain characteristic? We can test these ideas with data.

But our *natural confirmation bias makes us far more likely to look for evidence that the idea we favor is correct than to look for ways it may be mistaken*. We start testing the idea we think is most likely and as soon as we find enough evidence to support it, we dive into the solution.

Decision-driven Data

The inclination to look for supportive data can easily lead us to serious mistakes. Social scientists report that analyses of investments we favor inexorably take on a rosier look than investments we are doubtful about. Many small choices go into collecting and crunching data and analyzing opportunity and risk and presenting results.   Absent a conscientious effort to avoid confirmation bias, small choices — all valid on their own — tend to be made to support our initial opinion. **We think we are making data-driven decisions, but we are really collecting decision-driven data.**

In *Thinking Fast and Slow*, Daniel Kahneman describes a study of high-performing schools to determine if size played a role in quality of educational outcomes. The data indicated that the top quartile in educational performance contained a disproportionate number of small schools, supporting the hypothesis that small schools provided better quality education. This led to some expensive policy decisions that produced no educational benefit. It turns out that small schools are disproportionately represented in the worst performing quartile as well, due to the statistical tendency of larger populations to "regress to the mean" or basically become more "average" and thus to be under-represented in the top and bottom quartile.

Confirmation bias also plays an important role in the inordinate impact of first impressions. A first impression provides a very tiny and possibly serendipitous sample of a candidate's qualities and qualifications. Yet, people who believe this is a very intelligent candidate before the interview tend to notice more signs of high intelligence.

Confirmation bias is simply one of the traits that comes with the human condition and sadly can lead us blindly to waste resources and sometimes even make some pretty dire errors. The history of war provides many examples of bad decisions driven by confirmation bias and the resultant excessive confidence in a favorable outcome and disregard for information supporting a contrary analysis.

In theory, the explosion of information would lead to more and better information, more nuanced understanding, and less bias, but as Nate Silver points out in the Introduction to his book, *The Signal and the Noise*, we face danger whenever the quantity of information grows faster than our ability to fairly and effectively process it. We must choose what information to access and to credit, and that's when our biases take over.

"In principle the availability of a great deal of information could protect us from the confirmation bias; we could use information sources to find alternative positions and objections raised against our own. If we did that and thought hard about the results, we would expose ourselves to a valuable dialectical process of objections and replies. ... But if we attend only to confirming data, we deprive ourselves of the opportunity to have well-reasoned, fair, and accurate beliefs."

(Trudy Govier, A Practical Study of Argument, 7th ed. Wadsworth, 2010)

Wise Leadership

What can we do to protect our decision making process from distortion by this pervasive human bias? The literature on confirmation bias suggest that we have several defenses to deploy.

1) Recognize the bias and remind yourself to look for it in your decisions and analyses. Remind yourself that the authors of *everything* you read (including this article) are making a point that is supported by the data they present, but is not necessarily by data they do not present — and in fact may not even have seen if they did not look hard enough for contrary data. (Since this article is on confirmation bias, I felt compelled to do a short search for evidence refuting the idea that people tend to suffer from this bias, but found very little. There appears to be consensus about confirmation bias.) Remind yourself that the talented and well-intentioned people providing you with analysis and recommendations are also subject to confirmation bias. Ask for contrary data.

2) Ask "what else could it be?" Think creatively about alternative explanations and alternative solutions. Explore the whole feasible set, if possible.

3) Encourage the expression of contrary views and ideas. "If you value the differences in people, the differences will produce value." Aggressively seek out and try to understand contrarian views. For many people, the first impulse is to refute contrarian views and argue our own.   But the best decisions are likely to be made by those who "seek first to understand rather than be understood."

Forbes posted an article about how Warren Buffet recognizes and seeks to avoid confirmation bias in investment decisions by giving voice to opinions that contradict his own. "At the recent Berkshire Hathaway annual meeting in Omaha, Buffett invited hedge fund trader Doug Kass to participate. Kass is a critic of Buffett and his investment style, and is actually betting against Berkshire Hathaway stock by shorting it."

This article also quotes Warren Buffet recommending an approach used by Charles Darwin: "Charles Darwin used to say that whenever he ran into something that contradicted a conclusion he cherished, he was obliged to write the new finding down within 30 minutes. Otherwise his mind would work to reject the discordant information, much as the body rejects transplants. Man's natural inclination is to cling to his beliefs, particularly if they are reinforced by recent experience — a flaw in our makeup that bears on what happens during secular bull markets and extended periods of stagnation."

No cure exists for confirmation bias, but neither is it fatal. By assiduously practicing these three steps we can neutralize a good deal of the power of this "brain bug" and go on to make better and better decisions.

> *"…men observe when things hit, and not when they miss; and commit to memory the one, and forget and pass over the other."*

Sir Francis Bacon