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*The Believing Brain*

Excerpts from Chapter 12 — Confirmations of Belief

**How Our Brains Convince Us That We Are Always Right**

[1] Once we form beliefs and make commitments to them, we maintain and reinforce them through a number of powerful cognitive heuristics that guarantee they are correct. A heuristic is a mental method of solving a problem through intuition, trial and error, or informal methods when there is no formal means or formula for solving it (and often even when there is). These heuristics are sometimes called rules of thumb, although they are better known as cognitive biases because they almost always distort percepts to fit preconceived concepts. Beliefs configure perceptions. No matter what belief system is in place—religious, political, economic, or social—these cognitive biases shape how we interpret information that comes to our senses and mold it to fit the way we want the world to be and not necessarily how it really is; once again, the basis of belief-dependent realism.

[2] I call this general process belief confirmation. There are a number of specific cognitive heuristics that operate to confirm our beliefs as true. When integrated into the processes of *patternicity* and *agenticity*, these heuristics support my thesis that beliefs are formed for a variety of subjective, emotional, psychological, and social reasons, and then are reinforced, justified, and explained with rational reasons.

**The Confirmation Bias: The Mother of All Cognitive Biases**

[3] Throughout this book I have referenced the confirmation bias in various contexts. Here I would like to examine it in detail, as it is the mother of all the cognitive biases, giving birth in one form or another to most of the other heuristics. Example: as a fiscal conservative and social liberal I can find common ground whether I am talking to a Republican or a Democrat. In fact, I have close friends in both camps, and over the years I have observed the following: no matter what the issue is under discussion, both sides are equally convinced that the evidence overwhelmingly supports their position. I'm sure it does because of the confirmation bias, or the tendency to seek and find confirmatory evidence in support of already existing beliefs and ignore or reinterpret disconfirming evidence. The confirmation bias is best captured in the biblical wisdom Seek and ye shall find.

[4] Experimental examples abound. In 1981, psychologist Mark Snyder tasked subjects to assess the personality of someone whom they were about to meet, but only after they reviewed a profile of the person. Subjects in one group were given a profile of an introvert (shy, timid, quiet), while subjects in another group were given a profile of an extrovert (sociable, talkative, outgoing). When asked to make a personality assessment, those subjects who were told that the person would be an extrovert tended to ask questions that would lead to that conclusion; the introvert group did the same in the opposite direction. In a 1983 study, psychologists John Darley and Paget Gross showed subjects a video of a child taking a test. One group was told that the child was from a high socioeconomic class while the other group was told that the child was from a low socioeconomic class. The subjects were then asked to evaluate the academic abilities of the child based on the results of the test. Even though both groups of subjects were evaluating the exact same set of numbers, those who were told that the child was from a high socioeconomic class rated the child's abilities as above grade level, and those who thought that the child was from a low socioeconomic class rated the child as below grade level in ability. This is a striking indictment of human reason but a testimony to the power of belief expectations.

[5] The power of expectation was displayed in a 1989 study by psychologists Bonnie Sherman and Ziva Kunda, who presented a group of subjects with evidence that contradicted a belief they held deeply, and with evidence that supported those same beliefs. The results showed that the subjects recognized the validity of the confirming evidence but were skeptical of the value of the disconfirming evidence. In another 1989 study, by psychologist Deanna Kuhn, when children and young adults were exposed to evidence inconsistent with a theory they preferred, they failed to notice the contradictory evidence, or if they did acknowledge its existence, they tended to reinterpret it to favor their preconceived beliefs. In a related study, Kuhn exposed subjects to an audio recording of an actual murder trial and discovered that instead of evaluating the evidence first and then coming to a conclusion, most subjects concocted a narrative in their mind about what happened, made a decision of guilt or innocence, then rifflfed through the evidence and picked out what most closely fit the story.
The confirmation bias is particularly potent in political beliefs, most notably the manner in which our belief filters allow in information that confirms our ideological convictions and filters out information that dis-confirms those same convictions. This is why it is so easy to predict which media outlets liberals and conservatives choose to monitor. We now even have an idea of where in the brain the confirmation bias is processed thanks to an fMRI study conducted at Emory University by Drew Westen.

During the run-up to the 2004 presidential election, while undergoing a brain scan, thirty men—half self-described "strong" Republicans and half "strong" Democrats—were tasked with assessing statements by both George W. Bush and John Kerry in which the candidates clearly contradicted themselves. Not surprisingly, in their assessments of the candidates, Republican subjects were as critical of Kerry as Democratic subjects were of Bush, yet both let their own preferred candidate off the evaluative hook. Of course. But what was especially revealing were the neuroimaging results: the part of the brain most associated with reasoning—the dorsolateral prefrontal cortex—was quiescent. Most active were the orbital frontal cortex, which is involved in the processing of emotions, and the anterior cingulate cortex—our old friend the ACC, which is so active in patternicity processing and conflict resolution. Interestingly, once subjects had arrived at a conclusion that made them emotionally comfortable, their ventral striatum—a part of the brain associated with reward—became active.

In other words, instead of rationally evaluating a candidate's positions on this or that issue, or analyzing the planks of each candidate's platform, we have an emotional reaction to conflicting data. We rationalize away the parts that do not fit our preconceived beliefs about a candidate, then receive a reward in the form of a neurochemical hit, probably dopamine. Westen concluded:

We did not see any increased activation of the parts of the brain normally engaged during reasoning. What we saw instead was a network of emotion circuits lighting up, including circuits hypothesized to be involved in regulating emotion, and circuits known to be involved in resolving conflicts. Essentially, it appears as if partisans twirl the cognitive kaleidoscope until they get the conclusions they want, and then they get massively reinforced for it, with the elimination of negative emotional states and activation of positive ones.

**Hindsight Bias**

In a type of time-reversal confirmation bias, the hindsight bias is the tendency to reconstruct the past to fit with present knowledge. Once an event has occurred, we look back and reconstruct how it happened, why it had to happen that way and not some other way, and why we should have seen it coming all along. Such "Monday-morning quarterbacking" is literally evident on the Monday mornings following a weekend filled with football games. We all know what plays should have been called . . . after the outcome. Ditto the stock market and the endless parade of financial experts whose prognostications are quickly forgotten as they shift to post hoc analysis after the market closes. It's easy to "buy low, sell high" once you have perfect information, which is available only after the fact when it is too late.

The hindsight bias is on prominent display after a major disaster, when everyone thinks that they know how and why it happened, and why our experts and leaders should have seen it coming. NASA engineers should have known that the 0-ring on the space shuttle Challenger's solid rocket booster joints would fail in freezing temperatures leading to a massive explosion, or that a small foam strike on the leading edge of the wing of the space shuttle Columbia would result in its destruction upon reentry. Such highly improbable and unpredictable events become not only probable but practically certain after they happen. The hand-wringing and finger-pointing by the members of NASA's investigative commissions tasked with determining the causes of the two space shuttle disasters were case studies in the hindsight bias. Had such certainty really existed before the fact, then of course different actions would have been taken.

The hindsight bias is equally evident in times of war. Almost immediately following the Japanese attack on Pearl Harbor on December 7, 1941, for example, conspiracy theorists went to work to prove that President Roosevelt must have known it was coming because of the so-called bomb plot message that U.S. intelligence intercepted in October 1941: a Japanese agent in Hawaii had been instructed by his superiors in Japan to monitor warship movements in and around the naval base at Pearl. That sounds fairly damning and, in fact, there were eight such messages dealing with Hawaii as a possible target that were intercepted and decrypted by U.S. intelligence before December 7. How could our leaders not have seen it coming? They must have, and
therefore they let it happen for nefarious and Machiavellian reasons. So say the conspiracy theorists with their hindsight bias dialed up to full.

[12] Between May and December of that year, however, there were no less than fifty-eight messages intercepted regarding Japanese ship movements indicating an attack on the Philippines, twenty-one messages involving Panama, seven messages affiliated with attacks in Southeast Asia and the Netherlands East Indies, and even seven messages connected to the United States' West Coast. There were so many intercepted messages, in fact, that army intelligence stopped sending memos to the White House out of concern that there might be a breach in security leading the Japanese to realize that we had broken their codes and were reading their mail.

[13] President George W. Bush was subject to the same type of conspiratorial hindsight bias after 9/11, when a memo surfaced dated August 6, 2001, entitled "Bin Laden Determined to Strike in U.S." Reading the memo in hindsight is eerie, with references to hijacked planes, bombing the World Trade Center, and attacks on Washington, D.C., and the Los Angeles International Airport. But if you read it in a pre-9/11 mind-set, and in the context of the hundreds of intel memos tracking the various comings and goings and potential targets of al-Qaeda—an international organization operating in dozens of countries and targeting numerous American embassies, military bases, navy ships, and the like—it is not at all clear when, where, or if such attacks might happen. Think about the hindsight bias in today's context in which we know with near certainty that al-Qaeda will strike again, but we lack the information to know where and when and how they will attack. This leads us to defend against the last attack.

**Self-Justification Bias**

[14] This heuristic is related to the hindsight bias. The self-justification bias is the tendency to rationalize decisions after the fact to convince ourselves that what we did was the best thing we could have done. Once we make a decision about something in our lives we carefully screen subsequent data and filter out all contradictory information related to that decision, leaving only evidence in support of the choice we made. This bias applies to everything from career and job choices to mundane purchases. One of the practical benefits of self-justification is that no matter what decision we make—to take this or that job, to marry this or that person, to purchase this or that product—we will almost always be satisfied with the decision, even when the objective evidence is to the contrary.

[15] This process of cherry-picking the data happens at even the highest levels of expert assessment. Political scientist Philip Tetlock, for example, in his book *Expert Political Judgment*, reviewed the evidence for the ability of professional experts in politics and economics to make accurate predictions and assessments. He found that even though all of them claimed to have data in support of their positions, when analyzed after the fact such expert opinions and predictions turned out to be no better than those of nonexperts—or even chance. Yet, as the self-justification heuristic would predict, experts are significantly less likely to admit that they are wrong than nonexperts. Or as I like to say, smart people believe weird things because they are better at rationalizing their beliefs that they hold for nonsmart reasons.

[16] As we saw in the previous chapter, politics is filled with self-justifying rationalizations. Democrats see the world through liberal-tinted glasses, while Republicans filter it through conservative-shaded lenses. When you listen to both "conservative talk radio" and "progressive talk radio" you will hear current events interpreted in ways that are 180 degrees out of phase. So incongruent are the interpretations of even the simplest goings-on in the daily news that you wonder if they can possibly be talking about the same event. Social psychologist Geoffrey Cohen quantified this effect in a study in which he discovered that Democrats are more accepting of a welfare program if they believe it was proposed by a fellow Democrat, even if the proposal came from a Republican and is quite restrictive. Predictably, Cohen found the same effect for Republicans, who were far more likely to approve of a generous welfare program if they thought it was proposed by a fellow Republican. In other words, even when examining the exact same data people from both parties arrive at radically different conclusions.

[17] A very disturbing real-world example of the self-justification heuristic can be seen in the criminal justice system. According to Northwestern University law professor Rob Warden,
You get in the system and you become very cynical. People are lying to you all over the place. Then you develop a theory of the crime, and it leads to what we call tunnel vision. Years later overwhelming evidence comes out that the guy was innocent. And you're sitting there thinking, "Wait a minute. Either this overwhelming evidence is wrong or I was wrong—and I couldn't have been wrong because I'm a good guy." That's a psychological phenomenon I have seen over and over.

Jesse “The Body” Ventura versus Michael “The Mind” Shermer
Michael Shermer
http://www.michaelshermer.com/tag/conspiracy-theories/

[1] On Monday afternoon, April 11, I appeared on Southern California Public Radio KPCC’s Patt Morrison show to briefly debate (dare I say wrestle?) the former Navy Seal, Minnesota Governor, professional wrestler, television host, and author Jesse “The Body” Ventura, who was on a book tour swing through Los Angeles promoting his latest conspiracy fictions he believes are facts entitled The 63 Documents the Government Doesn’t Want You To Read. (The figure of 63 was chosen, Jesse says, because that was the year JFK was assassinated.) Presented in breathtaking revelatory tones that within lies the equivalent of the Pentagon Papers, what the reader actually finds between the covers are documents obtained through standard Freedom of Information Act requests that can also be easily downloaded from the Internet.

[2] No matter, with bigger-than-life Jesse Ventura at the conspiratorial helm everything is larger than it seems, especially when his unmistakable booming voice pronounces them as truths. I had only a few hours to read the book, but that turned out to be more than adequate since most of the documents are familiar to us conspiracy watchers and what little added commentary is provided to introduce them appears to be mostly written by Ventura’s co-author Dick Russell, the pen behind the mouth for many of Jesse’s books. (Since he is no longer wrestling perhaps he should change his moniker to Jesse “The Mouth” Ventura.)

[3] Surprisingly, given his background in the military and government, Ventura seems surprised to learn that governments lie to their citizens. Shockingly true, yes, but just because politicians and their appointed cabinet assigns and their staffers sometimes lie (mostly in the interest of national security but occasionally to cover up their own incompetence and moral misdeeds), doesn’t mean that every pronouncement made in the name of a government action is a lie. After all, as in the old logical chestnut—“This statement is untrue” (if it’s true it’s untrue and vice versa)—if everything is a lie then nothing is a lie. Likewise, I noted up front on the show, if everything is a conspiracy then nothing is a conspiracy.

[4] Given the helter skelter nature of talk radio and Jesse’s propensity to interrupt through his booming voice any dissenters from his POV, I tried to make just four points. Let’s call them Conspiracy Skeptical Principles.

Conspiracy Skeptical Principle #1:
[5] There must be some means of discriminating between true and false conspiracy theories. Lincoln was assassinated by a conspiracy; JFK was not. The Archduke Franz Ferdinand was assassinated by a conspiracy of Serbian operatives that triggered the outbreak of the First World War; Princess Diana was not murdered by the Royal Family or any other secretive organization, but instead died by the most common form of death on a highway: speeding, drunk driving, and no seat belt.

Conspiracy Skeptical Principle #2:
[6] Cognitive Dissonance and the need to balance the size of the event with the size of the cause. Jesse Ventura said: “Do you mean to tell me that 19 guys with box cutters taking orders from a guy in a cave in Afghanistan brought down the most powerful nation on earth?” First of all, America is alive and well, thank you, even though Ventura has since moved to Mexico. But, yes, as a matter of fact, that is the only way such an event can happen: Sizable cohorts of operatives in prominent positions (Bush, Rumsfeld, Chaney, the CIA, the FBI, et al.) are too noticeable to get away with such a conspiracy. (By the way, 9/11 was a conspiracy: 19 members of Al Qaeda plotting to fly planes into buildings without telling us ahead of time constitutes a conspiracy.) It is the lone nuts living in the nooks and crannies of a free society (think Lee Harvey Oswald, John Hinkley, etc.) who become invisible by blending into the background scenery.
Conspiracy Skeptical Principle #3:

What else would have to be true if your conspiracy theory is true? Jesse proclaimed on the show that the Pentagon was hit by a missile. His proof? He interviewed a woman on his conspiracy TV show who said she worked inside the Pentagon and never saw a plane hit it. Well, first of all, earlier in the show when I brought up Jesse’s conspiracy television series he discounted it, saying “that’s pure entertainment.” But now he wants to use an interview from that same show not as entertainment but as proof. As well, hardly anyone working in the Pentagon that day saw anything happen because they were inside the five-sided building and the plane only hit on one side, and even there, presumably (hopefully), people are actually working and not just sitting there staring out the window all day. But to the skeptical principle: As I said on the show, “If a missile hit the Pentagon, Jesse, that means that a plane did not hit it. What happened to the American Airlines plane?” Jesse’s answer: “I don’t know.”

Sorry Jesse, not good enough. It’s not enough to poke holes at the government explanation for 9/11 (a form of negative evidence); you must also present positive evidence for your theory. In this case, tell us what happened to the plane that didn’t hit the Pentagon because there are a lot of grieving families who would like to know what happened to their loved ones (as would several radar operators who tracked the plane from hijacking to suddenly disappearing off the screen in the same place as the Pentagon is located). Finally, I directed Jesse and our listeners to www.skeptic.com to view the photograph of the American Airlines plane debris on the lawn in front of the Pentagon, below. Are we to believe that the U.S. government timed the impact of a missile on the Pentagon with the hijackers who flew the plane into the Pentagon?

Conspiracy Skeptical Principle #4:

Your conspiracy theory must be more consistent than the accepted explanation. Jesse says that Osama bin Laden and Al Qaeda did not orchestrate 9/11, and instead it was done by the Bush administration (or, he says, at least by Chaney and his covert operatives). As evidence, Jesse wants to know why Osama bin Laden has not been indicted for murder by the United States government. As well, he says, why was no one fired for not acting on the famous memos of the summer of 2001 that warned our government that Al Qaeda was financing operatives in America in flight training schools and that Osama bin Laden would strike on U.S. soil. Hold on there Jesse—first you say that Osama bin Laden and Al Qaeda are innocent of this crime, and then you present evidence in the form of documents that the U.S. government was forewarned that Osama bin Laden and Al Qaeda would attack us? Sorry sir, you can’t have it both ways. You can’t hold to two contradictory conspiracy theories at the same time and use evidence from each to support the other. (Well, you can, but that would be a splendid example of logic-tight compartments in your head keeping separate contradictory ideas.)

Finally, in frustration I presume, Jesse accused me of being a mouthpiece of the government, just parroting whatever my overlords command me to say to keep the truth hidden. That conspiracy theory happens to be true, except for the part about the mouthpiece, the government, the parrot, and the truth.

P.S. During my recent lecture tour swing through Wisconsin I was confronted at a restaurant by three 9/11 Truthers who were unable to attend my talk that night or even join the local skeptics group meeting that afternoon with me, and instead handed me a pile of literature and a DVD to watch touting the merits of the group known as Architects and Engineers for 9/11 Truth, who appear to hold fast to the belief that the WTC buildings were intentionally demolished by explosive devices AND that the hijackers (whoever they really were) somehow managed to fly the planes into the WTC buildings at precisely where the demolition experts planted the explosive devices—at the exact correct floors, at the exact angle at which the wings were tilted, because that is where the collapse of both buildings began. Check it out yourself below, along with our issue of Skeptic on 9/11 conspiracy theories, which was being read in Wisconsin by the little Wombat given to me by my hosts at the University of Wisconsin.