

Psychology's Treacherous Trio: Confirmation Bias, Cognitive Dissonance, and Motivated Reasoning



[In 2009](#), a nine year-old Brazilian girl became pregnant with twins after being raped by her stepfather. With advice from doctors, her mother opted for her to have an abortion. After pleading with Brazil, which outlaws abortions except when the mother's life is in danger or when she has been raped, her daughter was granted one. Then things got really ugly. When the Archbishop of the city of Recife heard the news he invoked Canon law and excommunicated the mother and daughter and the members of the medical team who performed the abortion; the stepfather, meanwhile, remained a loyal and accepted member of the church.

Was it right for the girl to have an abortion? Was the Archbishop correct to condemn her, the mother, and the medical team? And what of Brazil's stance on the matter?

We've heard these debates fleshed out countless times, and almost always to no avail. Far more interesting (and quantifiable) are the psychological forces that fuel these conversations. While many like to believe that they have a special access to the truth, the reality is that we all see the world not as it is, but as we want it to be: Republicans watch Fox while Democrats watch MSNBC; creationists see fossils as evidence of God, evolutionary biologists see fossils as evidence of evolution; a mother sees abortion as the best thing for her daughter, and the church sees it as unholy and sinful. You get the point – our beliefs dictate what we see and how we see.

The question is: why do humans remain so steadfast to their beliefs, sometimes even in the face of overwhelming opposing evidence?

The answer rests in a few psychological tendencies that when mixed together form a potent recipe for ignorance. The first is confirmation bias, which I wrote about last month over at Scientificamerican.com. Confirmation bias is exactly what it sounds like – the propensity for people to look for what confirms their beliefs and ignore what contradicts their beliefs while not being concerned for the truth.

The classic confirmation bias [study](#) comes from Stanford back in the late 1970s. Researchers brought in two groups of participants, one that supported capital punishment and one that opposed capital punishment. Both groups read two studies, "one seemingly confirming and one seemingly disconfirming their existing beliefs about the deterrent efficacy of the death penalty." After reading the studies and other commentary, all of which were fake, researchers found that the proponents and opponents of capital punishment rated the studies that confirmed their point of view as higher than the studies that disconfirmed their point of view. Sadly, as the authors conclude, "people of opposing views can each find support for those views in the same body of evidence."

Then there's [cognitive dissonance](#), which describes a "state of tension that occurs whenever a person holds two cognitions that are psychologically inconsistent." Leon Festinger introduced it in 1957 after he infiltrated and studied a UFO cult convinced the world would end at midnight on December 21st, 1954. In his book [When Prophecy Fails](#), Festinger recounts how after midnight came and went, cult members began to look for reasons for why the end of the world had not come. Eventually the leader of the cult, Marian Keech, explained to her members that she received a message from automatic writing, which told her that the God of Earth decided to spare the planet from destruction. Relieved, the cult members continued to spread their doomsday ideology to non-believers. Although Festinger's example is extreme, all of us do this everyday. Take unhealthy food; we all know that pizza is bad for us, but we still eat it. And after finishing a few slices we say "it was worth it," or "I'll run it off tomorrow." Or take smokers; they know that smoking kills but continue to smoke. And after unsuccessfully quitting, they justify their failures by claiming that, "smoking isn't that bad" or that "it is worth the risk." Whether it's UFO's, food, or smoking we all hold inconsistent beliefs and almost always side with what is most comfortable instead of what is true.

Finally, there's motivated reasoning, which describes our tendency to accept what we want to believe with much more ease and much less analysis than what we don't want to believe. In [one study](#) done by Ziva Kunda, participants were brought into a room and told that they'll be playing a game. Before the game started, they were instructed to watch someone else play the game who will either compete with them or against them. However, Kunda rigged the study; the participants actually watched a confederate, who played the game perfectly answering every question correct. Kunda found that the participants who were lined up to play against the confederate were dismissive and tended to attribute his accuracy to luck whereas the participants who were lined up to play with the confederate were praiseworthy of his "skills." Both groups saw the same performance yet came to exact opposite conclusions. Clearly, [we scrutinize much less](#) when things go our way.

So what's the difference between confirmation bias, cognitive dissonance, and motivated reasoning? The short answer is that there really aren't any differences. Generally speaking, they serve the same purpose, and that is to frame the world so it makes sense to us. But there are a few nuances worth mentioning. For one, motivated reasoning is like an evil twin to cognitive dissonance in that it tries to avoid it. And for another, and I quote NYU psychologist Gary Marcus who says it perfectly, "whereas confirmation bias is an automatic tendency to notice data that fit with our beliefs, motivated reasoning is the complementary tendency to scrutinize ideas more carefully if we don't like them than if we do."

Back to Brazil.

People don't change their minds – just the opposite in fact. Brains are designed to filter the world so we don't have to question it. While this helps us survive, it's a subjective trap; by only seeing the world as we want to, our minds narrow and it becomes difficult to understand opposing opinions. This helps explain the conflict in Recife. When we only look for what confirms our beliefs (confirmation bias), only side with what is most comfortable (cognitive dissonance) and don't scrutinize contrary ideas (motivated reasoning) we impede social, economic, and academic progress. I am not sympathetic to the Archbishop by any degree, but when we consider how effortless it is for people to latch onto ideas it is easier to understand why he took such a harsh and unchanging stance.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, 108 (3), 480-498 DOI: [10.1037/0033-2909.108.3.480](https://doi.org/10.1037/0033-2909.108.3.480)

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