

Irrationality

1. Confirmation Bias and Cognitive Filtering: Let's do an experiment. I have a mathematical rule about sequences of numbers in mind, and I want you to guess it. Before we begin, I'll give you an example of a sequences that follows my rule: {2, 4, 8}

Your task is to guess my rule. Before making your guess, you may form a hypothesis as to what my rule is, and test it by stating any sequence of numbers you want, and I'll tell you either "Yes, it follows my rule" or "No it doesn't". You may do this several times if you want. Once you're satisfied, you may make a guess as to what my rule is.

How would you proceed? Most people proceed as follows:

{8, 16, 32}	yes
{16, 32, 64}	yes

And so on; and ultimately guess something like "factors of 2" or "multiples of 2". What's weird is that nearly always, EVERYTHING they ask is something that they expect the answer to be "yes"—they never ask something where they expect the answer to be "no". Yet, falsification is far more informative than confirmation. (Watch an excellent video describing the phenomenon [here](#).) [*Spoiler: Scroll to the end to see my rule.*]

[Why would we think that falsification is more informative than confirmation? Because it only takes ONE falsification to learn with certainty that a belief is false. Meanwhile, one confirmation is inconclusive. Consider: If my model or hypothesis predicts that X will happen, and X does NOT happen, we know for sure that my hypothesis is false. But, what if X DOES happen? Perhaps we're justified in raising our confidence in that hypothesis by a little bit, but we still haven't shown CONCLUSIVELY that it is correct. Imagine for example:

- According to the theory of spontaneous generation, if I leave this rotten meat out overnight, there will be maggots in it in the morning. A-ha! There are! Confirmed!*
- According to the geocentric model of the solar system, the Sun will rise in the East in the morning as it orbits the Earth. A-ha! It did! Confirmed!*
- According to Newtonian physics, this ball will travel in this specific arc when I throw it. A-ha! It did! Newtonian physics confirmed!*

You get the idea...]

"The first step is admitting that you have a problem." [Michael Huemer](#) is referring here to the fact that most people are irrational, but do not want to admit it. As early as 400 years ago, Francis Bacon noticed a strange psychological phenomenon, which fostered irrationality; a phenomenon we now call "confirmation bias".

Confirmation Bias: The tendency to seek out, favor, or focus on, only that evidence or information that confirms one's pre-existing belief (while overlooking or discounting evidence that disconfirms it).

Bacon noticed that human beings have a tendency to accept without question those things which conform to their pre-existing beliefs, and either ignore or rigorously scrutinize those things that oppose them. Even worse, we tend to only LOOK FOR or SEEK evidence that confirms what we already believe, and never seek evidence to the contrary, or examine potential objections to what we already believe.

While this tendency is often helpful—for instance, likely you'd happily accept without question someone's claim that they saw a squirrel today, but would seriously question someone's claim that they saw a unicorn today—confirmation bias can sadly infect our more important beliefs too, such as moral, political, or religious beliefs.

For instance, Bacon tells a story of someone who, seeing a painting of some believers who had survived a shipwreck, takes this to be a confirmation that God had saved them. A skeptic replies, "But, where is the painting of all the believers who drowned!?"

Confirmation bias can have terrible moral consequences too. For example, regarding *people*: Whenever we think that some person (or group of people) is good, we tend to overlook their wrongdoings. And, when we think that someone (or some group) is bad, we will tend to find only evidence that confirms this. But, then, someone who favors deportation of undocumented immigrants will be pre-disposed to emphasize or remember crime caused by undocumented immigrants, while ignoring or being blind to crime caused by citizens. (Consider also how racism, sexism, hatred of the "other" political party, etc., will also be fed and fueled by confirmation bias.)

Regarding moral and political (and philosophical) *beliefs*, confirmation bias can cause us to be overly critical of, and see no merit in arguments which oppose our own position; and not critical enough toward arguments which support our own positions.

But, hold on. Don't get mad yet. For most of us, ignoring information is probably not intentional. We're hard-wired to do it. For instance, before proceeding, watch [this video](#) on attention. (Original [here](#), and an excellent talk about this and related phenomena [here](#).) Lesson: Your brain NATURALLY filters out a majority of the information it receives in order to keep us sane. Constantly, we are bombarded with sensory data. Hundreds of people pass you on the sidewalk, a million leaves are fluttering in the breeze, a thousand cars pass by, 10,000 products fill the shelves in the grocery store, and so on. If we had to pay attention to ALL OF THAT we would never get anything else done. Naturally, the brain has a built-in "spam filter" which filters out over 99% of the world around us, and delivers only the information that it takes to be relevant to our consciousness. This phenomenon is known as **selective attention**, or **cognitive filtering**.

Example: Have you ever bought new shoes, a new phone, or laptop, or whatever, and suddenly the next day you notice that EVERYONE has those shoes, or that phone, etc.? It happens to all of us. Now, which is more likely: That yesterday a thousand other people went out and bought the same item that you did, or that they've had those items for quite some time and you are just now NOTICING this?

Surely the latter is more likely. This is because your brain is constantly filtering the data it receives from your senses. When you buy the shoes, your brain tags that item as suddenly "relevant" and is more likely now to deliver it to your consciousness. This is a special kind of selective attention bias known as the frequency illusion (or the Baader-Meinhof phenomenon). Video [here](#). Unfortunately, evidence that CONFIRMS your pre-existing beliefs is far more likely to be tagged "relevant" than evidence which DISCONFIRMS them. Long story short, we seem to be hard-wired in a way that pre-disposes us to not even NOTICE evidence that contradicts our present beliefs.

2. Perception: Now stare at this [Dancing Girl](#) illusion for a while. Which way is the dancer spinning?

About 50% of people say she's spinning clockwise, and 50% say she's spinning counter-clockwise. For some people, she changes direction repeatedly without warning. Don't believe me? Stare at her a little longer and see if you can get her to change directions.

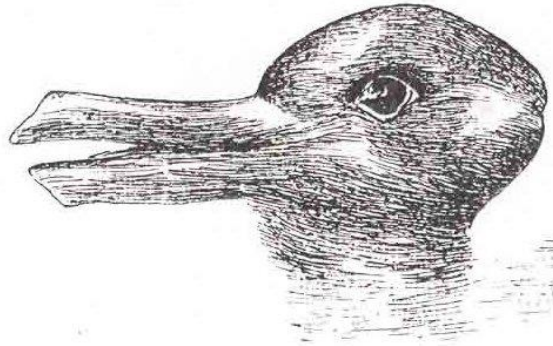
In reality the figure is a merely 2-dimensional silhouette of someone spinning—and this silhouette looks the same no matter which direction someone is spinning—but our brains IMPOSE 3 dimensions on the image and, to make sense of this third dimension of depth and the appearance of spinning, also imposes a DIRECTION upon that spinning.

You'll probably also remember the ['Laurel – Yanny' debate](#). And before that there was



#thedress
#itwastotallyblueandblack

And of course, the original, the famous duck-rabbit, made famous by philosopher Ludwig Wittgenstein in the 1950's. Is it a duck or a rabbit?



The point here is that, even when two people have access to EXACTLY the same information, they may still disagree about what they're looking at, or how to interpret it. But, it gets worse. What you think you perceive is MANIPULATABLE. Consider for instance [this audio illusion](#), where you will hear something different depending on what you are looking at!

Or listen to [this audio clip](#) followed by [this one](#). The first clip is unintelligible until you are primed (in the second clip) to hear what the woman is saying.

And in the 1970's this phenomenon led people to hear [messages in rock music](#).

These are just a few examples. Long story short: As it turns out, in general, not only does the brain filter out a majority of the information it receives, but, of the information that DOES get presented to your conscious mind, it has gone through an interpretation filter—and this filter does not always present reality to you accurately.

In short, our perception of the world is quite limited, susceptible to manipulation, and even flawed. So, we must take the utmost care when forming beliefs about the world, and not just accept or trust every idea or perception that we have without scrutiny.

3. Moral Beliefs: Due to **confirmation bias**, we tend to cling to what we already believe. But, how do we form our beliefs in the first place? That's subject to bias too:

- **Self-interest:** You are more likely to believe something if it benefits you, or some group that you are a part of. For instance, the rich are more likely to oppose taxing the rich, African Americans are more likely to favor reparations, drug users are more likely to be in favor of drug legalization, etc.
- **Social bonding:** You are more likely to believe something if people you admire, are friends with, or WANT to be friends with, or date, etc., already believe it. Shared beliefs help to form and strengthen social bonds. As social creatures, we seek this.

- **Self-image:** You are more likely to believe something if it fits the self-image that you have of yourself. For instance, a “tough” person might be in favor of guns and war, while someone who sees themselves as “gentle and kind” might favor protecting animals and helping the poor. (*Internalized gender stereotypes can affect this too.*)

Do any of your political beliefs, favored policies, etc., benefit you? or align with those of someone you’d like to bond with? or align with the way you view yourself? Almost certainly, yes. But these facts alone are not good indicators that your belief is CORRECT.

The fact that our moral and political beliefs are regularly guided by these three factors (as well as confirmation) indicates that we often approach moral issues irrationally. And here is some further evidence for that claim. Fact: There is **widespread disagreement** about religion, politics, and morality. Furthermore, this disagreement is **persistent** (quite difficult to resolve), **polarized** (people tend to gravitate toward one of two opposing camps), and people’s feelings about these issues are **very strong**. Now, the evidence for the truth about these matters is either poor, or it’s not. Let’s consider those two options:

If evidence is poor:

Strong belief would be irrational. Perhaps these issues are too complicated, perhaps there is simply not enough evidence to figure them out. But, then, why would people feel so STRONGLY about them? Surely that would be irrational.

Polarization would be weird. People don’t just disagree; they disagree in a very POLARIZED way. That is, most people fall into one of two main clusters of belief: (1) conservative, religious, against abortion, against same-sex marriage, against immigration, against heavier gun regulation, and against re-distributive taxation. (2) liberal, less religious, and favoring abortion, same-sex marriage, immigration, heavier gun regulation, and re-distributive taxation. But, if evidence for these issues were poor, we might expect to find LOTS of very DIFFERENT sets of beliefs (or better yet, no firm beliefs at all). It would be VERY surprising to find roughly two polarized camps, full of people with very strong beliefs.

If evidence is not poor.

Disagreement would be irrational. Perhaps there is good evidence for the truth about these matters. But, then, why is there so much disagreement? At best, exactly half of the population is being irrational. At worst, EVERYONE is.

Polarization would still be weird. Despite the presence of good evidence, at least HALF (or else all) of Americans hold beliefs that are exactly contrary to what that evidence entails. That would be weird.

In short, either way, whether the evidence is poor or not, the conclusion seems to be the same: People are irrational. (See Michael Huemer reach this conclusion [here](#).) Why? Because our biases and filters blind us to the truth.

4. The Solution: The frequency illusion (suddenly everyone has these shoes!) is evidence that the brain can be re-trained. We can teach it to NOTICE bias, counter-examples, and so on, tagging them as “relevant”. In short, we can make a conscious effort, to combat our biases, and avoid approaching moral issues irrationally. Some tips:

(1) Look for indicators: The following are often good indicators of irrationality:

- You have strong beliefs about a topic, but have never carefully examined the evidence for BOTH sides of that issue.
- When (if) you begin carefully examining the evidence, none of your beliefs change.
- The policies/views you endorse are those that you would benefit from most.
- You are easily angered when someone disagrees with you.
- You believe that everyone who holds the opposite view is evil, stupid, etc. (It is unlikely that 50% or more of the population are evil, idiotic, etc.)

(2) Keep an eye out for bias: Look for biases in your own behavior. Ask of your beliefs, WHY do I believe this? HOW did I form this belief? What REASONS do I have? Over time, you will re-tool your mind to pre-emptively combat confirmation (and other) biases.

(3) Know what your opponent believes: When people hear an argument whose conclusion they agree with, they typically accept it at face value without questioning its premises. When they hear an argument whose conclusion they DISAGREE with, they will typically scrutinize its premises to find something wrong. (*This is confirmation bias.*)

But, it gets worse. We tend to have only like-minded friends, watch like-minded news sources, and so on. (*Most of us live in what is called an “epistemic bubble”.*) So, often, the problem is not that we don’t NOTICE opposing viewpoints. Rather, we’re never exposed to them in the first place! (*We’ll discuss this next time.*)

So, we must make a conscious effort to seek them out. When considering a moral issue, it is important to gather evidence from BOTH SIDES. How can you know that your opponent is wrong when you cannot even state what her argument for her view is?

(4) Deal civilly with others: When debating someone else, avoid name-calling and anger. Avoid telling them that they are irrational or ignorant, and instead simply present the facts in a calm manner. Being rude to someone is a sure-fire way to get them to permanently disagree with you (and also not like you).

Remember #thedress! Not everyone experiences the world the same way that you do. Not everyone sees the world through the same filter as you. This, by the way, is the first step toward empathy.

To resolve an important issue with someone who disagrees, first try to figure out what SORTS of facts would need to be established in order to support a conclusion. Are there some baseline facts that you can both agree on? Then attempt to discover those facts together, and proceed from there.

(5) Study philosophy: Philosophy is basically the discipline of seeking truth by carefully reasoning from what is known, or agreed upon, toward what is not agreed upon. So, in order to think more clearly, reason more carefully, and better understand why you believe what you believe, and how to defend your beliefs against others, you ought to study philosophy. And lucky you! You're studying it right now!

[My rule was: Any series of whole numbers, where each number in the sequence is greater than the one before it. (The first number can be anything.)]