

## Ch 7 Anchoring Bias, Framing Effect, Confirmation Bias, Availability Heuristic, & Representative Heuristic

### Anchoring

**Anchoring** is a [cognitive bias](#) that describes the common human tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions. During [decision making](#), anchoring occurs when individuals use an initial piece of information to make subsequent judgments. Once an anchor is set, other judgments are made by adjusting away from that anchor, and there is a bias toward interpreting other information around the anchor. For example, the initial price offered for a used car sets the standard for the rest of the negotiations, so that prices lower than the initial price seem more reasonable even if they are still higher than what the car is really worth.

The anchoring and adjustment heuristic was first theorized by Amos Tversky and Daniel Kahneman. In one of their first studies, participants were asked to compute, within 5 seconds, the product of the numbers one through eight, either as  $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$  or reversed as  $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ . Because participants did not have enough time to calculate the full answer, they had to make an estimate after their first few multiplications. When these first multiplications gave a small answer – because the sequence started with small numbers – the median estimate was 512; when the sequence started with the larger numbers, the median estimate was 2,250. (The correct answer was 40,320.)

<https://en.wikipedia.org/wiki/Anchoring>

To illustrate the anchoring effect, let's say I ask you how old Mahatma Gandhi was when he died. For half of you I'll preface the question by saying: "Did he die before or after the age of 9?" For the other half I'll say: "Did he die before or after the age of 140?"

Obviously these are not very helpful statements. Anyone who has any clue who Gandhi was will know that he was definitely older than 9; while the oldest person who ever lived was 122. So why bother making these apparently stupid statements?

Because, according to the results of a study conducted by [Strack and Mussweiler \(1999\)](#), these initial statements, despite being unhelpful, affect the estimates people make. In their experiment, the first group guessed an average age of 50 and the second, 67. Neither was that close, he was actually assassinated at 87; but you can still see the effect of the initial number.

<http://www.spring.org.uk/2013/05/the-anchoring-effect-how-the-mind-is-biased-by-first-impressions.php>

J. C. Penney thought it was a smart move to eliminate coupons and instead create "everyday low pricing." Too bad they weren't aware of the power of the anchoring effect. When sales slid bigtime, they got the message. They've now reversed their policy and customers are returning. We need that anchor number to inform us that we're getting a bargain.

## Framing Effect

“The language that we use to frame a decision process also influences people’s perceptions greatly.”

We’ve seen how anchoring can influence the perception of value. The language that we use to frame a decision process also influences people’s perceptions greatly. To illustrate, let’s consider an example:

What if you encountered the following options?

1. A pound of meat that is 90% lean
2. A pound of meat that is 10% fat

Which would you prefer?

Even though these are just two different ways of saying exactly the same thing, you’d probably prefer option 1. Why? Because lean meat is better than fatty meat. The description, or frame, in which we present a decision highlights different attributes—lean versus fat—to which we draw the decision maker’s attention.

Now, this may seem like a simple example, but the concept of framing plays out in a myriad of ways in our daily lives, influencing our decisions in ways that we are largely unaware of. For example:

If you were a physician advising a patient on a form of treatment, you could frame the decision about whether to employ that treatment in either of the following ways:

1. This treatment has a 90% chance of saving your life.
2. This treatment has a 10% chance of failure, resulting in death.

People would respond differently to these two ways of framing the decision, even though both statements are essentially equivalent. Why is this so? Each of the two options presents a different perspective on the decision outcome. As a decision maker considers the outcome of a decision, we can draw his attention to either a positive outcome or a negative outcome—a gain or a loss.

<http://www.uxmatters.com/mt/archives/2011/03/how-anchoring-ordering-framing-and-loss-aversion-affect-decision-making.php>

## Confirmation Bias

Some psychologists restrict the term confirmation bias to selective collection of evidence that supports what one already believes while ignoring or rejecting evidence that supports a different conclusion.

Confirmation bias has been described as an internal "yes man", echoing back a person's beliefs. Experiments have found repeatedly that people tend to test hypotheses in a one-sided way, by searching for evidence consistent with their current hypothesis. Rather than searching through all the relevant evidence, they phrase questions to receive an affirmative answer that supports their theory.[9] They look for the consequences that they would expect if their hypothesis were true, rather than what would happen if they were false.

[https://en.wikipedia.org/wiki/Confirmation\\_bias](https://en.wikipedia.org/wiki/Confirmation_bias)

Imagine that you have tried to reach a friend (with whom you have an ambivalent relationship) by phone (or email), leaving messages, yet have not received a call in return. In situation like this, it is easy to jump to conclusions in an intuitive manner that your friend wants to avoid you. The danger, of course, is that you leave this belief unchecked and start to act as though it were true. You may tend to remember and interpret new information in a way that supports your belief about your friend. While at the same time, minimizing or ignoring new information that would suggest the opposite.

Confirmation bias occurs from the direct influence of desire on beliefs. When people would like a certain idea/concept to be true, they end up believing it to be true. They are motivated by wishful thinking. This error leads the individual to stop gathering information when the evidence gathered so far confirms the views (prejudices) one would like to be true.

Once we have formed a view, we embrace information that confirms that view while ignoring, or rejecting, information that casts doubt on it. Confirmation bias suggests that we don't perceive circumstances objectively. We pick out those bits of data that make us feel good because they confirm our prejudices. Thus, we may become prisoners of our assumptions.

Confirmation bias can also be found in anxious individuals, who view the world as dangerous. For example, a person with low self-esteem is highly sensitive to being ignored by other people, and they constantly monitor for signs that people might not like them. Thus, if you are worried that someone is annoyed with you, you are biased toward all the negative information about that person acts toward you. You interpret neutral behavior as indicative of something really negative.

In sum, people are prone to believe what they want to believe. Seeking to confirm our beliefs comes naturally, while it feels strong and counterintuitive to look for evidence that contradicts our beliefs. This explains why opinions survive and spread. Disconfirming instances are far more powerful in establishing truth. Disconfirmation would require look for evidence to disprove it.

<https://www.psychologytoday.com/blog/science-choice/201504/what-is-confirmation-bias>

## Availability Heuristic

Which job is more dangerous - being a police officer or a logger? While high profile police shootings might lead to you think that cops have the most dangerous job, statistics actually show that loggers are more likely to die on the job than cops. When it comes to making this type of judgment about relative risk or danger, our brains rely on a number of different strategies to make quick decisions.

This illustrates what is known as the availability heuristic, a mental shortcut that helps you make fast, but sometimes incorrect, assessments.

There are all kinds of mental shortcuts, but one common one involves relying on information that comes to mind quickly. This is known as the availability. If you can quickly think of multiple examples of something happening – such as police shootings – you will believe that it is more common.

How Does the Availability Heuristic Work?

When you are trying to make a decision, a number of related events or situations might immediately spring to the forefront of your thoughts. As a result, you might judge that those events are more frequent or probably than others. You give greater credence to this information and tend to overestimate the probability and likelihood of similar things happening in the future.

For example, after seeing several news reports about car thefts, you might make a judgment that vehicle theft is much more common than it really is in your area.

This type of availability heuristic can be helpful and important in decision-making. When faced with a choice, we often lack the time or resources to investigate in greater depth. Faced with the need to an immediate decision, the availability heuristic allows people to quickly arrive at a conclusion.

In another example, researchers have found that people who are more easily able to recall seeing antidepressant advertising were also more likely to give high estimates about the prevalence of depression.

<https://www.verywell.com/availability-heuristic-2794824>

Availability is a cognitive heuristic in which a decision maker relies upon knowledge that is readily available rather than examine other alternatives or procedures.

"There are situations in which people assess the frequency of a class or the probability of an event by the ease with which instances or occurrences can be brought to mind. For example, one may assess the risk of heart attack among middle-aged people by recalling such occurrences among one's acquaintances. Similarly, one may evaluate the probability that a given business venture will fail by imagining various difficulties it could encounter. This judgmental heuristic is called availability. Availability is a useful clue for assessing frequency or probability, because instances of large classes are usually reached better and faster than instances of less frequent classes. However, availability is

affected by factors other than frequency and probability. Consequently, the reliance on availability leads predictable biases,[...]" Tversky and Kahneman (1974)

<http://heuristics.behaviouralfinance.net/availability/>

### Representative Heuristic

On to *representativeness*. These decisions tend to be based on how similar an example is to something else (or how typical or *representative* the particular case in question is). In this way, representativeness is basically stereotyping. **While availability has more to do with memory of specific instances, representativeness has more to do with memory of a prototype, stereotype or average.** Let me try to make this clear with some examples:

"Tom is a nerd. He likes to play video games, build things, and doesn't have the highest social IQ. Is he more likely to be an mechanical engineer or a psychology major?" Most people would say he was most likely an engineer, even though psychology majors may outnumber mechanical engineers by a wide margin (base rate).

So when we use this heuristic, we compare Tom to the prototype and see he matches the engineer prototype well, and not so well the psychology major. In other words, he "represents" the category of mechanical engineers so well that we put him in that category, even though base rate information suggests we should put him in a different category.