

Data Is Your Friend: Extracting and Analyzing Statistics Cognitive Bias Handout

Cognitive bias describes the inherent thinking errors that humans make in processing information. These thinking errors prevent one from accurately understanding reality, even when confronted with all the needed data and evidence to form an accurate view. Said another way, cognitive bias is the common tendency to acquire and process information by filtering it through one's own likes, dislikes, and experiences. Common types of cognitive bias that may interfere with your interpretation of information include:

- **Anchoring** describes the common human tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions. 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

- An **availability heuristic** is a mental shortcut that relies on immediate examples that come to mind. 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 and possible 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 television programs on shark attacks, you start to think that such incidences are relatively common. When you go on vacation, you refuse to swim in the ocean because you believe the probability of a shark attack is high.

- **Confirmation bias** is the tendency to search for or interpret information in a way that confirms one's preconceptions. For example, a reporter who is writing an article on an important issue may only interview experts that support her or his views on the issue.

- **Frequency illusion** is the phenomenon in which people who just learn or notice something start seeing it everywhere. For example, when you are considering buying a particular type of car, you notice many more of that type of car on the road than ever before. The cognitive error is that you often conclude that this is because that car is becoming much more common or fashionable, rather than recognising the reality that the only thing that's changed is that you're taking notice of those cars now.

- **Negativity Bias** is a tendency to notice, pay more attention, or give more weight to negative experiences or information over positive. At parent-teacher conferences, your child's teacher has made several glowing comments about your son, but also mentions that he talks too much and can be disruptive at times. And though she said that they've been working on it and that he's getting better, the only thing you heard was that your son is being disruptive in the classroom. There was only one negative comment about your son yet there were several wonderful comments, including, "he's a pleasure to have in my class."

Because we are constantly making judgments and processing information, we are constantly at risk for cognitive bias. At one point or another, we have all been guilty of some type of cognitive bias. Although it's impossible to completely avoid cognitive biases, it *is* possible to understand what they are so that we can look for them when they arise and adjust our judgments as needed.

Sources: <http://rationalwiki.org>, <http://www.businessdictionary.com>, <http://www.psychologyandsociety.com>,
<http://education-portal.com>, <http://psychology.about.com>, <http://www.quora.com/>, <http://behaviorandmotivation.com>