Cognitive Biases

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**003 Let's talk first about cognitive biases. So when it comes to cognitive biases, or even logical fallacies, everyone does these or has these. We are all human and nobody is immune from them. Cognitive biases or logical fallacies have been and will always be part of the human experience, and in the coming years, and even today, it is interesting to see how cognitive biases and logical fallacies intersect with machine learning. In other words, if machines can learn, can they also be biased? Can our biases affect performance? I know that's for a completely separate discussion, but it's still very interesting and can apply to cyber intelligence. The important point though is to be cognizant of our human cognitive biases and choose how to think. We need to be in the moment and recognize different perspectives.

Cognitive Biases

- Error in thinking that occurs when people are processing and interpreting information in the world around them
- Result of our attempt to **simplify information processing**
- Tends to be a perceptual bias or pattern of thought
- Not cultural bias, organizational bias, or self-interest bias
- Mental shortcuts (Heuristics)

http://www.au.af.mil/au/awc/awcgate/psych-intel/art12.html;
https://www.verywell.com/what-is-a-cognitive-bias-2794963

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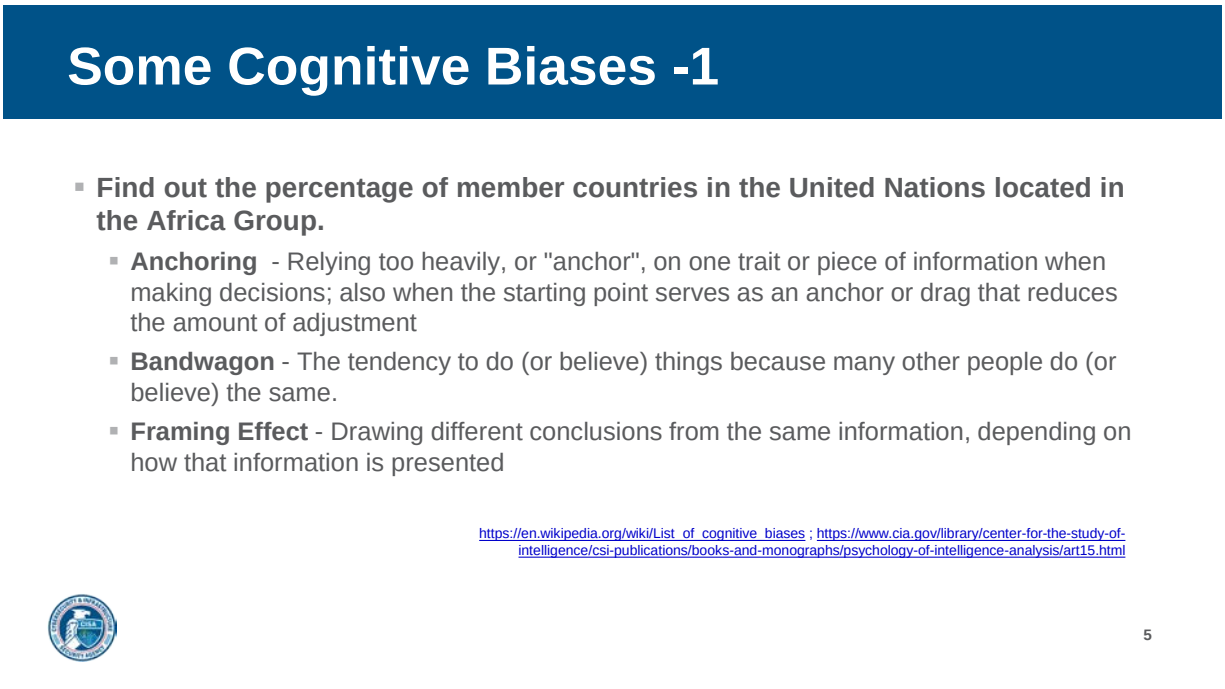
**004 So what is a cognitive bias?
A cognitive bias is an error in thinking that occurs when people are processing and interpreting the important information in the world around them. It's simply due to the sheer complexity of the world around us and the amount of information in the environment. It is necessary for us to sometimes rely on mental shortcuts that allow us to act quickly, and these errors are caused by our efforts to simplify the processing of information, these mental shortcuts. These errors tend to be consistent and predictable and related to how we choose to interpret and perceive the information. These errors could be caused by the way we remember an event or a problem with our attention, and it's important to distinguish cognitive biases from other forms of biases, such as

cultural bias, or bias that results from one's own self-interest. Again, a cognitive bias is a mental error caused by our efforts to simplify information processing, and they are usually consistent and predictable.

Some Cognitive Biases -1



**005 So there are many types of cognitive biases. The first one-- I'll give you a hypothetical example. Let's say, hypothetically, there is a physical classroom filled with analysts and I tell the room that they want to find the percentage of member countries in the United Nations located in the Africa group. I split the number of analysts in half and tell them to work in different groups to figure out the answer. For one group, I tell them to start with the number 10 percent in order to find the percentage of member countries in the U.N. located in Africa group.

For the second group, I tell them, "Maybe start with 65 percent." In other words, for each group, I'm giving them a number to start with as an estimated starting point, and then for them to think about the problem and adjust the number I gave them to as close as possible to what they think is the correct answer.

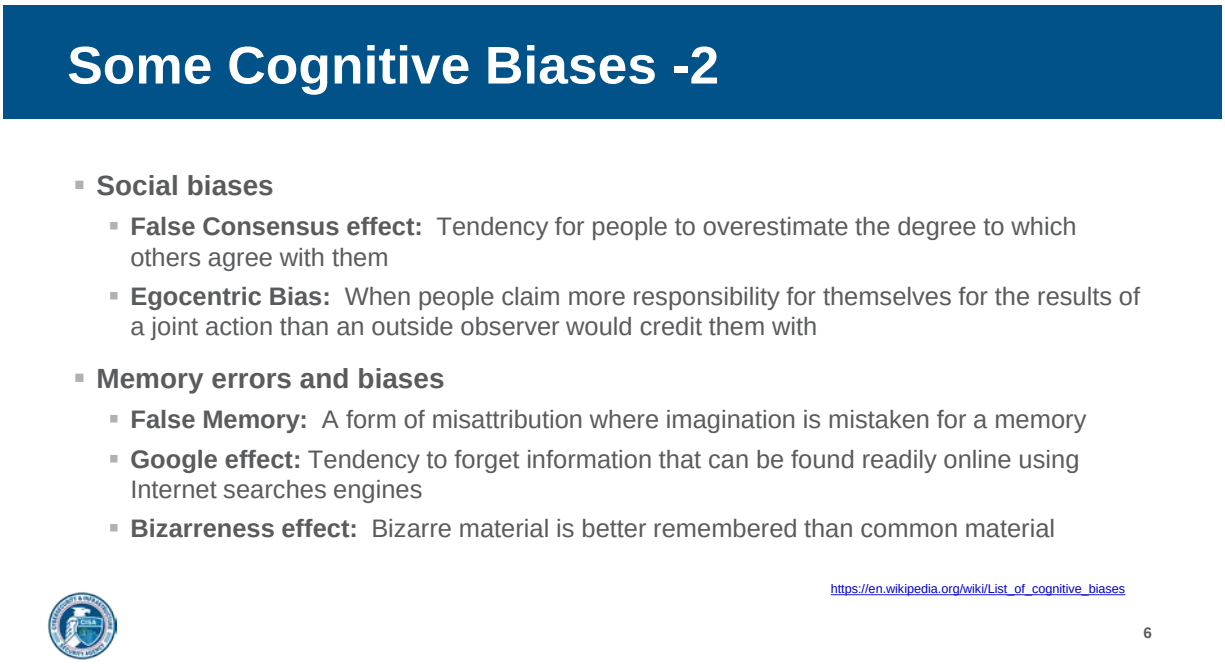
Well, for this particular situation in question, the correct answer is actually about 27.9 percent, as there are 54 countries in the Africa group and a total of 193 members. So what I basically did was I tried to demonstrate a cognitive bias called anchoring.

What is anchoring? Anchoring is a tendency to rely too heavily, or anchor, on one trait or piece of information when making decisions. It's usually the first piece of information that is acquired on a subject. It also, when a starting point, serves as an anchor or a drag that reduces the amount of adjustment, so the final estimate remains closer to that starting point than it ought to be. Whenever a cyber intelligence analyst moves into a new analytical area or takes over responsibilities for updating a series of judgments or estimates made by their predecessors, the previous judgments may have such an anchoring effect.

Another cognitive bias is called Bandwagon, and that's basically the tendency to do or believe things because many other people do or

believe them, the same thing, and I've seen that at meetings as well. This may be somewhat related to an authority bias, where your boss says he or she believes something and then everyone else now believes that as well.

Another cognitive bias is called the Framing Effect, and that means drawing different conclusions from the same information depending on how the information is presented. For example, Robert Clark, in his book "Intelligence Analysis: A Target-Centric Approach", talks about a classic example of the Framing Effect. In this example, one set of doctors in 1982 were told that a particular type of operation had a 93 percent survival rate. The other set of doctors were told that the same type of operation has a 7 percent mortality rate. Now, statistically this is the same thing, but what was observed was that the doctors preferred not to operate when they were presented with the mortality rate instead of the survival rate. So in other words, the way you communicate is just as important as to what you are communicating.



**006 There are some other additional cognitive biases grouped by social and memory error biases. One of these is called the False Consensus Effect, or Effort. This is the tendency for people to overestimate the degree to which others agree with them. For example, "I talked to ten people and they all agree with me." Well, really? Was it more like two people agreed with you? Another one is called the Egocentric Bias.

This is when people claim more responsibility for themselves as the result of a joint action than an outside observer would credit them with. For example, "I was the lead on that project, and the entire operation." Really? Is it possible that other folks might see that differently?

A False Memory Bias is a form of misattribution, where imagination is mistaken for memory. An example of that is when you say, "Well, I swear I read that," or "That did happen," when actually it did not.

Another type of cognitive bias is the Google Effect-- on other words, a tendency to forget information that can be found readily online using internet search engines or relying on technology. So for example, if I were to ask you to recite your best friend's email address or phone number or knowing the capital of Spain, how many could do that without looking anything up? That is the Google Effect, where the technology has allowed us to forget things or focus our attention on different things.

There's also something called the Bizarreness Effect. Bizarre material is better remembered than common material. So in the intel world, they warn you to be alert for sensational or sexy intelligence. You might remember it, but that's really all it is. Sensational isn't most likely to be true. For example, let's say you had this situation where a walk-in source comes into an embassy in Geneva claiming high-level access to some terrorist group and reports that tomorrow all the bridges in New York City, Pittsburgh, San Francisco are going to explode, all the nuclear power plants are going to explode in the United States, and there's going to be a massive cyberattack that will cause them a major blowout in every major city. Now, that's pretty

sensational information. If you're the person receiving that information, what do you write up in your report to management? Again, the Bizarreness Effect.

Notices

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