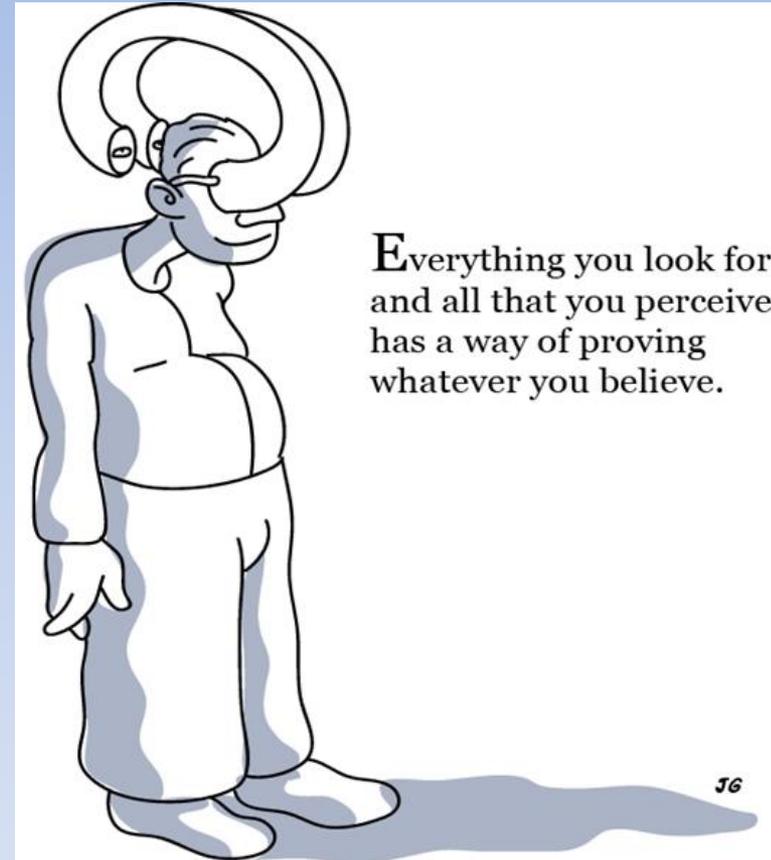


Cognitive biases impact decision-making.

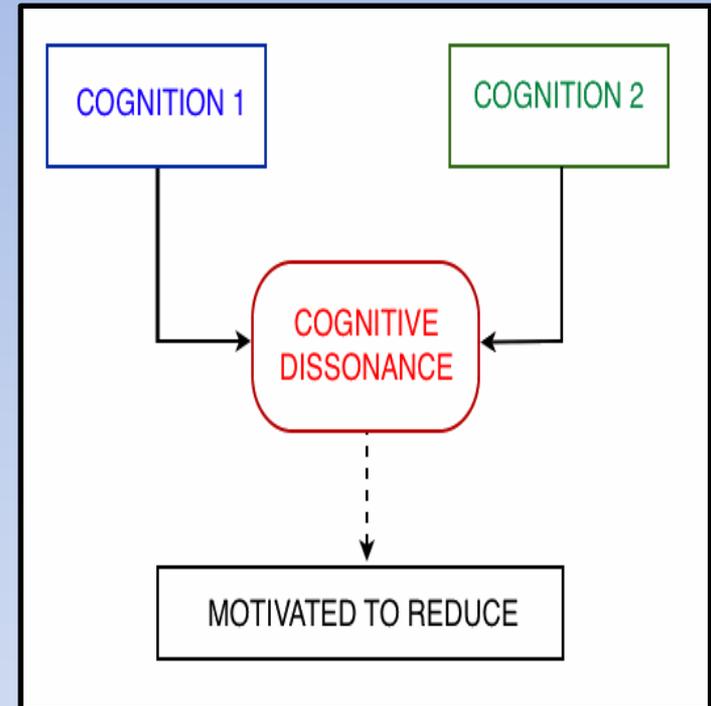
- Cognitive biases are mental mechanisms that: systematically influence judgment and decision-making.
- Cognitive biases occur without our conscious awareness.
- (They help us make decisions quickly, but can impair our ability to make rational judgments.)
 - *Note: we're not going to focus on why we have cognitive biases, but instead on their effects.*



Cognitive biases sound vaguely familiar.

A bias you have probably heard of is cognitive dissonance:

- an unpleasant state of arousal that results when two cognitions are in conflict, that you are motivated to reduce.
- *For example, if you voluntarily do a favor for someone you don't like very much, you begin viewing the person more positively.*



You have cognitive biases. Everyone has them.



Oh! Don't forget **FAE**, that is a bias too, right? Wait... What is **FAE** again? Can someone help me out?



Don't believe you have cognitive biases? Let's see!!

Jot down your answer in the margin of your notes. DO NOT SAY IT OUT LOUD.
I will count to 5 when I finish reading it, and you must answer by that time.

Each card has a letter on one side and a number on the other.
Which two cards should you turn over to decide whether the
following statement is true:

"If there is a D on one side, there is always a 5 on the other."



Card 1



Card 2



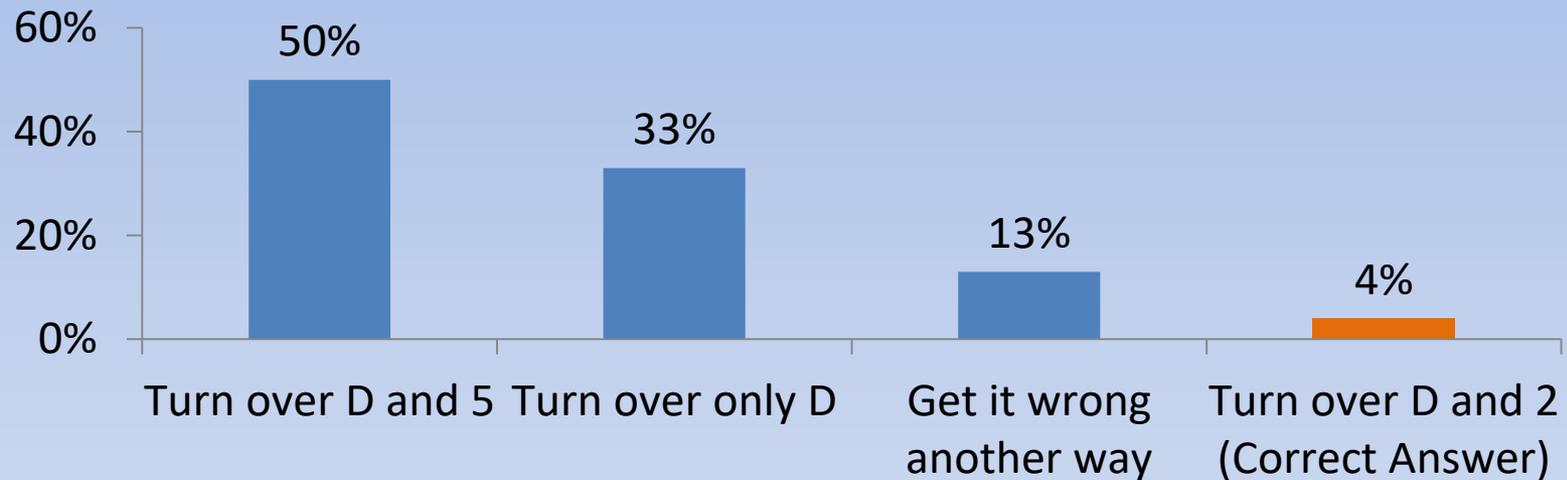
Card 3



Card 4

You may have gotten it right, but most people don't.

Percentage of Participants



- People tend NOT to turn over the 2 card because of our bias against looking for information that will disprove our beliefs.
- People tend to erroneously turn over the 5 card because we are biased to look for information that will confirm our expectations.

Barriers to Reasoning

- 4- Confirmation Bias
- The confirmation bias refers to the tendency to selectively search for and consider information that confirms one's beliefs.

- **Examples:**



&



- A reporter who is writing an article on an important issue may only interview experts that support her or his views on the issue.
- One who believes in astrology will believe when the horoscope is "right" and ignore when it is "wrong."



Stone Soup

by Jan Eliot



An approach more likely to occur than that illustrated in the cartoon above could be:

"Here's the conclusion. What facts can we find to support it?"

- Confirmation bias

Barriers to Reasoning

Our beliefs are, once established, likely to continue.

- 5 - Belief Bias (when an individual's own values, beliefs, prior knowledge, etc. affects, or distorts, the reasoning process.)
- 6 - Belief Perseverance (Sticking with your own beliefs when presented with conflicting evidence.)

In part, belief perseverance is maintained because of confirmation bias and belief bias.

Examples:

- Bias: Research studying the effect of prayer on illness.
 - A scientific researcher will use data to come to a conclusion.
 - A highly religious person may interpret the data in favor of prayer as a factor in healing.
 - An atheist may discount pro-prayer data.
- Perseverance: Someone who thinks they are a good driver gets a ticket and doesn't accept the fact that they may be an unsafe driver. They make excuses instead and continue to think that they drive safely.

All Cowboy fans who still believe that things are going to get better are suffering from belief perseverance.



Belief Perseverance



Seriously, there are people who refuse to believe the moon landing happened, that Elvis is dead, or that the holocaust occurred. These people continue to hold on to their belief, even with mountains of evidence to the contrary. Their "belief perseveres."

Barriers to Reasoning

- 7- Mental set
- An inability to see a problem from a fresh perspective.
- When a person approaches a problem one particular way, usually a way that has been successful in the past. (rigidity.)



The Mind Can Refuse to Make Connections

Because it gets "stuck"...

Q. How do you put a bear in a refrigerator?

A. Open the door, put the bear in, close the door.

Q. How do you put a lion in the refrigerator?

A. Open the door, take out the bear, put the lion in.

Q. Noah is hosting an animal conference. All animals but one attend. Which one?

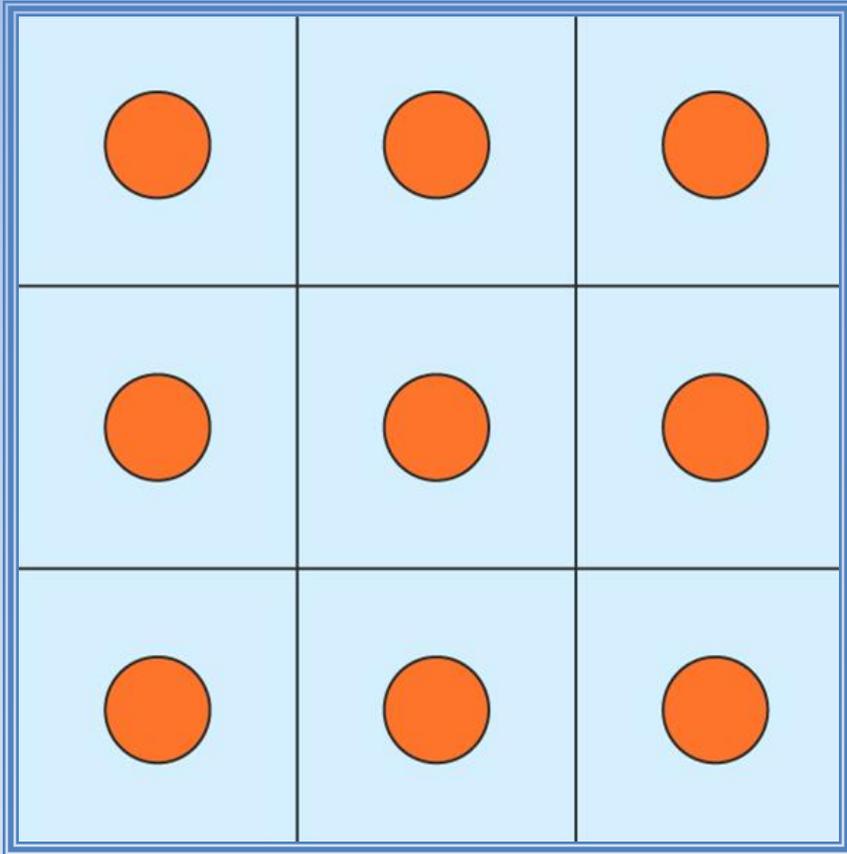
A. The lion who is freezing his butt off in the refrigerator

Q. You want to cross a river that is inhabited by crocodiles. How do you do it?

A. Swim across - the crocs are at the conference.



Mental Set



Using no more than four lines, can you connect all nine dots without lifting your pencil from the paper?

(Mental Sets Continued)

Tendency to fall into established thought patterns. Most people will use solutions or past experience to try to solve new problems (they think "what worked in the past is bound to work now").

- To overcome **mental sets** you must "think outside the box"—literally!

