

## Biased Reasoning Can Lead to Faulty Beliefs

### Three forms of thinking

(a)



You use **reasoning** to determine if a conclusion is valid. In the 2016 presidential campaign, candidate Jeb Bush stated that psychology majors needed to "realize, you're going to be working at Chick-fil-A." To show this statement was not valid, many people provided evidence. They posted signs showing what they do with their psychology degrees.

**FIGURE 8.10**

(b)



You use **decision making** to select between options. People often have to choose between foods that maximize pleasure and those that are better for their health.

(c)



You use **problem solving** to overcome obstacles. For example, how did this man solve the problem of getting out of the corner he painted himself into?

Courtesy of Kendra Schugt; Jamie Grill/Getty Images; JSP Studios/Alamy Stock Photo  
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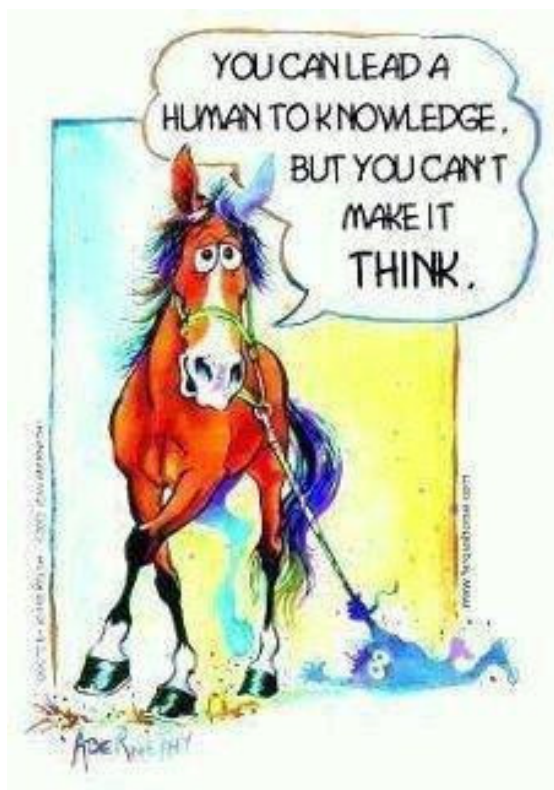
**Reasoning**

**Decision Making**

**Problem Solving**

## Biased Reasoning Can Lead to Faulty Thinking and Beliefs

- Confirmation bias
- Illusory Correlations
- Hindsight Bias
- **Belief-bias (not in your textbook)**

A cartoon illustration of two men standing on either side of a doghouse. The man on the left has a speech bubble saying "SIX" and the man on the right has a speech bubble saying "NINE". The doghouse has a number on its side, but it is not clearly visible. The background is a solid light brown color.

~~Just because you are right,  
does not mean, I am wrong.~~

But one of those people is wrong, someone painted a six or a nine, they need to back up and orient themselves, see if there are any other numbers to align with. Maybe there's a driveway or a building to face, or they can ask someone who actually knows.

People having an uniformed opinion about something they don't understand and proclaiming their opinion as being equally valid as facts is what is ruining the world. No one wants to do any research, they just want to be right.

## Confirmation bias

The tendency of people to pay greater attention to evidence that supports their belief and ignore or downplay evidence that does not support their beliefs (page 311). Or, the strong tendency to search for information or evidence that confirms your belief, while making little or no effort to search for information that disconfirms your belief.



- The internet, with all of its information will probably divide us, rather than bring us together. There is a tendency for people to look for information that is consistent with their beliefs, rather than information that is inconsistent with their beliefs.
- When students take multiple choice tests, there is a tendency for students to think of all the reason why their choice is correct and not consider reasons why other choices may be correct.

The confirmation bias can lead to incorrect beliefs, including illusory correlations.

- If you believe that women are bad drivers, you think of all of the women who are bad drivers, which is consistent with your belief. You also don't think of women who are good drivers or men who are bad drivers.
- Democrat leaning voters will visit Democrat leaning websites. Likewise, Republican leaning voters will visit Republican leaning websites.



## The Confirmation Bias

The tendency of people to pay greater attention to evidence that supports their belief and ignore or downplay evidence that does not support their beliefs (page 311). Or, the strong tendency to search for information or evidence that confirms your belief, while making little or no effort to search for information that disconfirms your belief.

- inconsistent information / information that doesn't support your belief
- mixed information
- + consistent information / information that doesn't support your belief

All Information				Confirmation Bias			
- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+	- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+
- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+	- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+
- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+	- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+
- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+	- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+
- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+	- - - -	○ ○ ○ ○ ○ ○ ○ ○	+	+

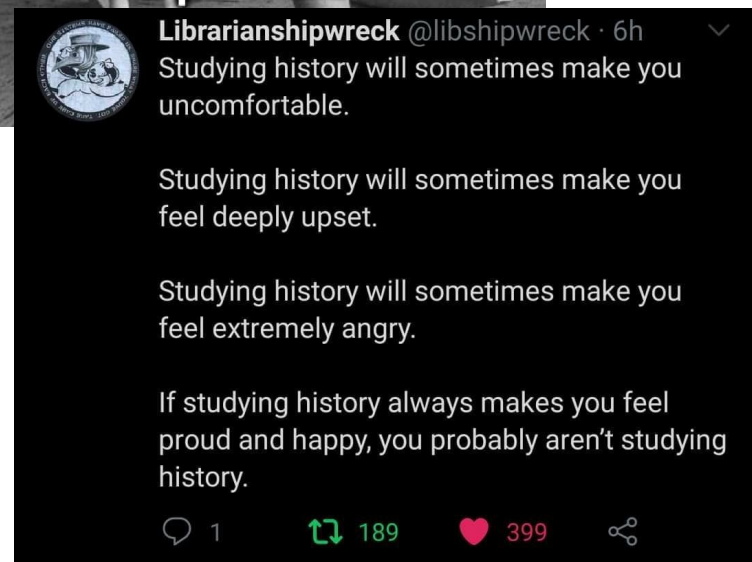
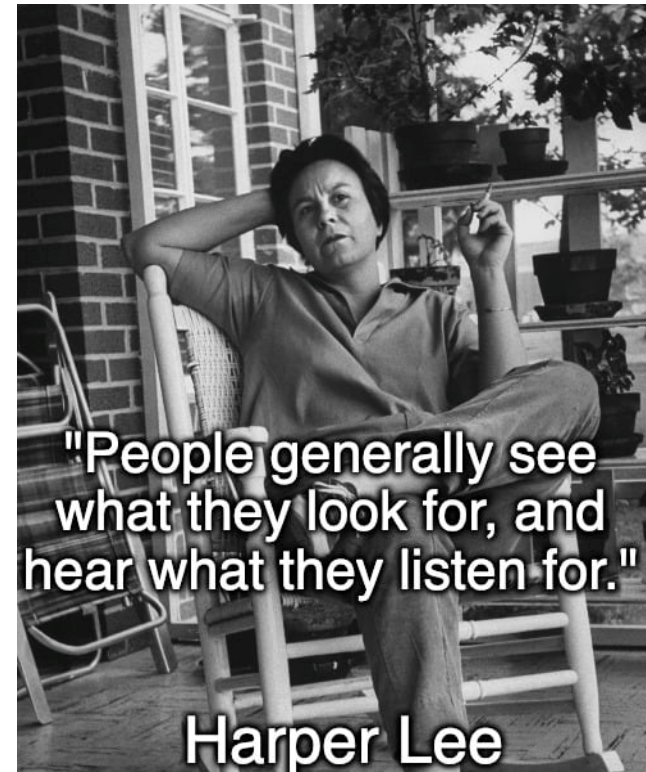
With the confirmation bias, you are only aware of a small bit of information that is consistent with your prior beliefs.

You search for information consistent with your belief, while ignoring information inconsistent with your belief





## The Confirmation Bias



## **Reducing the Confirmation bias**

To reduce the confirmation bias, we need to search for information that is inconsistent with our beliefs. We need to search for information that would show our belief is incorrect. This is something we normally don't do because it challenges our beliefs and is uncomfortable (see negative reinforcement).

However, there are some beliefs that are internally and externally consistent with a lot of evidence to support their veracity, the confirmation bias would be appropriate. The difficulty is assessing which beliefs meet these criteria.

When someone claims to have evidence that people spontaneously combust (they don't), or don't need to eat/drink and can sustain themselves with just sunlight, we can readily dismiss that claim and their evidence.

## Illusory correlations

An illusory correlation, or illusion of correlation is the misperception that two chance events that happen at the same time are somehow related ([page 311](#)). It is also described as the mistaken belief that two factors or events are related when they are not. Illusory correlations can arise from the availability heuristic or confirmation bias.

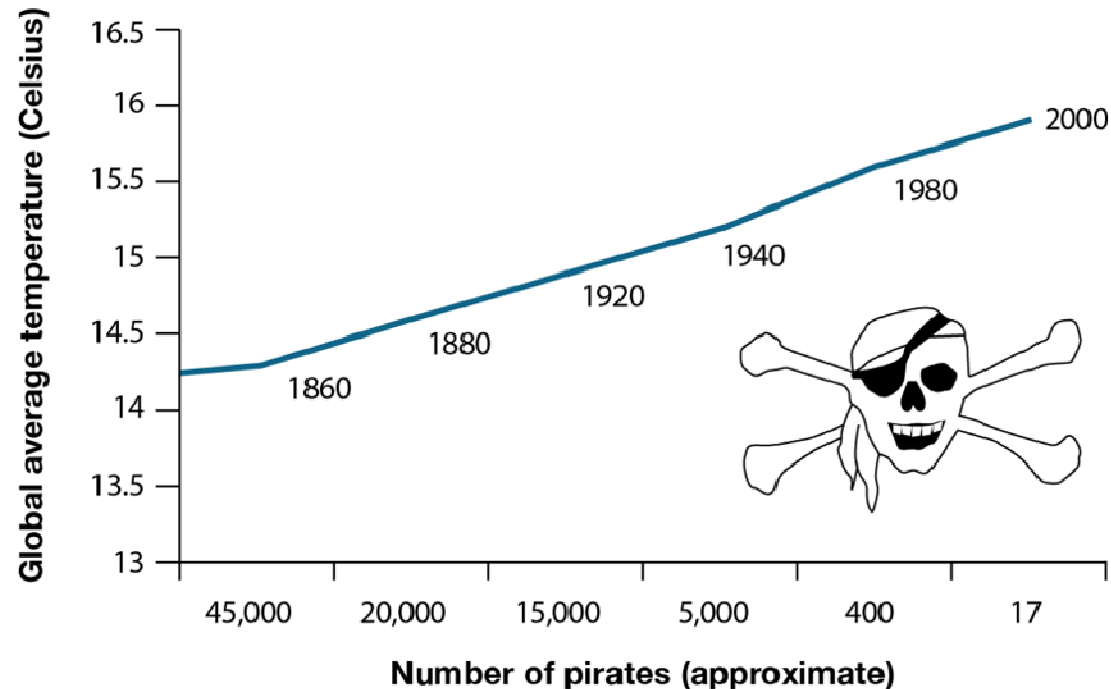


FIGURE 8.11



## Illusory correlations

An illusory correlation, or illusion of correlation is the misperception that two chance events that happen at the same time are somehow related ([page 311](#)).

### Example:

You may have the belief that the bank machine is always busy when you are in a hurry. There is a mistaken belief that there is a relation between being in a hurry and the bank machine is busy.

Belief: The bank machine is always busy when I am in a hurry

	Bank machine is busy	Bank machine is not busy (free)
I'm in a hurry		
I'm not in a hurry		

## Illusory correlations

Belief: Democrats: Republicans promote bad policies.

Belief: Republicans: Democrats promote bad policies.

(This belief is affected by media exposure, which tends to favor Republicans, since most owners of newspapers, radio and television are Republicans)

	Democrats	Republicans
Bad policies		
Good policies		

We can also develop negative beliefs about minorities due to biases in reasoning.

	Minorities	Caucasians
Law-abiding		
Criminal Acts		

## **Hindsight Bias**

The hindsight bias is the tendency of people to believe they could have predicted or known something after they know the outcome or after the information becomes known (page 312).

Only after we know what happens, it is easy to construct a plausible story to see how the conclusion was “inevitable”. The hindsight bias can

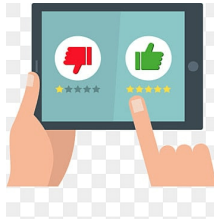
- make it easier to blame a victim if, you the observer, were overconfident in seeing the how the outcome occurred after knowing the outcome.
- make it easier to discount proactive work and learning if you were overconfident in seeing how obvious the outcome was.

In close elections,

- it was easy to see that Trump would win in 2016 after the election.
- it was easy to see that Biden would win in 2020 after the election.
  
- People will say that they could have easily predicted that Trump would win the 2024 election after the election when Trump won the election.
- People will say that they could have easily predicted that Harris would win the 2024 election after the election when Harris won the election.

## **Belief Bias (not in your textbook)**

The belief bias is the tendency for a person (or group of people) to use different standards when evaluating the quality of evidence. Our standards for determining the quality of evidence is lower for consistent information and our standards for inconsistent information are higher.



When evidence that supports and does not support your belief is available to you,

- Evidence that is consistent is seen as more convincing and well done.
- Evidence that is inconsistent is explained away as irrelevant or ignored.

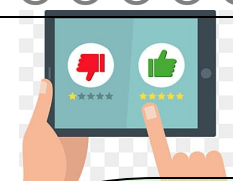
The belief-bias can be more pronounced with strongly held beliefs.

## Belief Bias (not in your textbook)

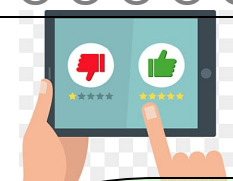
The belief bias is the tendency for a person (or group of people) to use different standards when evaluating the quality of evidence. Our standards for determining the quality of evidence is lower for consistent information and our standards for inconsistent information are higher.

- inconsistent information / information that doesn't support your belief
- mixed information
- + consistent information / information that doesn't support your belief

All Information	Belief-Bias
- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +	- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +
- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +	- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +
- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +	- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +
- - - -    ○ ○ ○ ○ ○ ○ ○ ○    + + + +	- <span style="border: 1px solid black; padding: 2px;">- -</span> ○ ○ ○ ○ ○ ○ ○ ○    + + <span style="border: 1px solid black; padding: 2px;">+ +</span>



This information is poor quality



This information is good quality





## The Belief-Bias

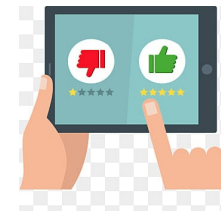
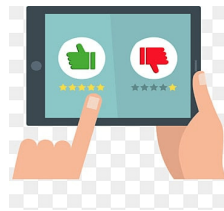
### Example 1: The Death Penalty

A group of people who supported the death penalty and a group of people who opposed the death penalty were presented with evidence that showed the death penalty was effective and evidence the death penalty was ineffective.



Strong supporters of the death penalty		Strong opponents of the death penalty	
Evidence that shows the death penalty is <b>effective</b>	Evidence that shows the death penalty is <b>ineffective</b>	Evidence that shows the death penalty is <b>effective</b>	Evidence that shows the death penalty is <b>ineffective</b>

One would expect that when both groups saw the mixed evidence, their beliefs would become more moderate. They actually became more extreme.



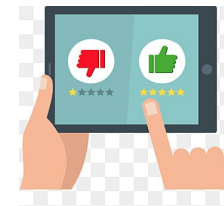
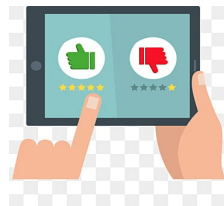
## The Belief-Bias

The people who supported the death penalty became more convinced that their position was “right”, and those who were opposed to the death penalty became more convinced that their position was “right”. They become more extreme in their beliefs, not more moderate.

When evidence that supports and does not support your belief is available to you,

- Evidence that is consistent is seen as more convincing and well done.
- Evidence that is inconsistent is explained away as irrelevant or ignored.

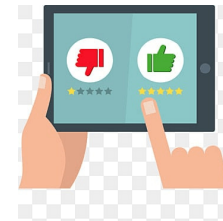
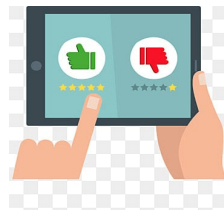
<b>Strong supporters of the death penalty</b>		<b>Strong opponents of the death penalty</b>	
Evidence that shows the death penalty is <b>effective</b>	Evidence that shows the death penalty is <b>ineffective</b>	Evidence that shows the death penalty is <b>effective</b>	Evidence that shows the death penalty is <b>ineffective</b>
<b>Good quality!</b>	<b>Poor quality</b>	<b>Poor quality</b>	<b>Good quality!</b>



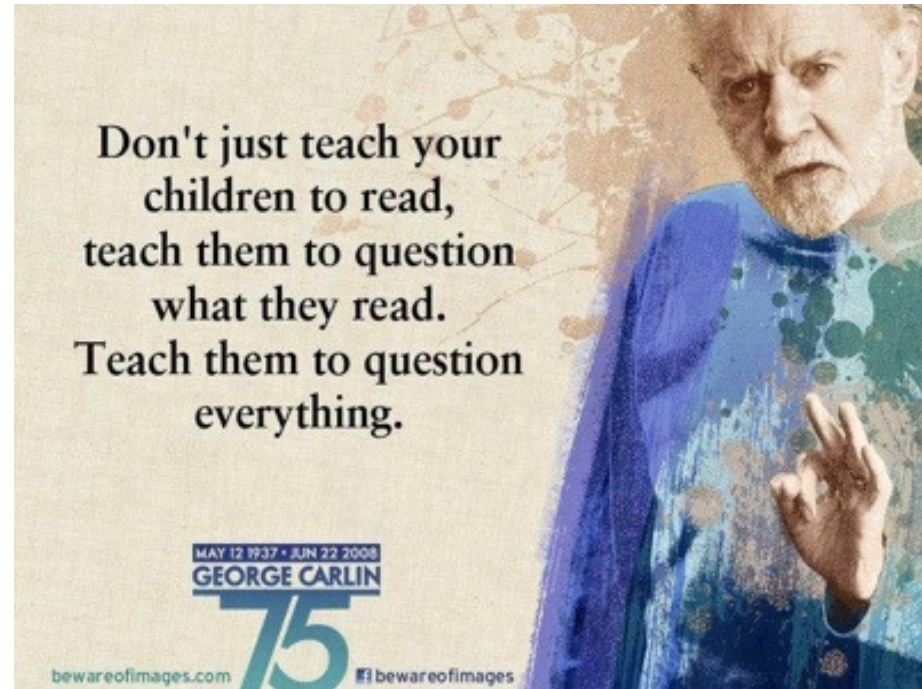
## The Belief-Bias

Supporters and opponents of the death penalty don't interpret the evidence as being equally valid, they interpret the evidence that supports their belief as overwhelming due to the "better quality" of evidence. The quality of evidence is distorted by their own belief.

Strong supporters of the death penalty		Strong opponents of the death penalty	
Evidence that shows the death penalty is effective	Evidence that shows the death penalty is ineffective	Evidence that shows the death penalty is effective	Evidence that shows the death penalty is ineffective
Good quality!	Poor quality	Poor quality	Good quality!



## The Belief-Bias



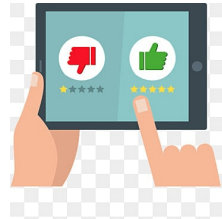
I agree with the sentiment of teaching people how to question what they read.

However, we tend to question claims that are contrary to our beliefs and not apply the same standards to our own beliefs. In addition, we tend to seek information that is consistent with our beliefs and ignore information that is inconsistent with our beliefs. We need to teach people about how their biases evaluate what they question.

## **Belief Bias (not in your textbook)**

There is a lot of similarity between confirmation bias and the belief bias.

<b>Belief-Bias</b>	<b>Confirmation Bias</b>
There is a difference in evaluating information.	There is a difference in the search of information.



<u>Belief</u>	<u>Belief-bias</u>	<u>Confirmation bias</u>
<ul style="list-style-type: none"><li>• Women are bad drivers</li><li>• Democrats push bad policies</li><li>• Republicans push bad policies</li><li>• More babies are born on the night of a full moon than any other night</li></ul>		

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