

## Episode II: Biased Reasoning Can Lead to Faulty Thinking and Beliefs

- Zoom ID: 992 7842 5311
- Confirmation bias
- Belief-bias



## **Confirmation bias**

The tendency to search for evidence that confirms an existing belief while ignoring evidence that is inconsistent with that 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.

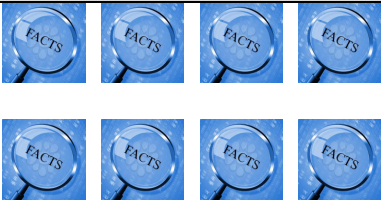



The confirmation bias can lead to incorrect beliefs, including illusory correlations.

- 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.
- Republican leaning voters will visit Republican leaning websites.

## The Confirmation Bias

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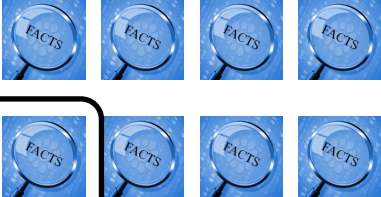





All Information		
	Supports your Belief	Does Not Support your Belief
Accurate Information		
Inaccurate information		

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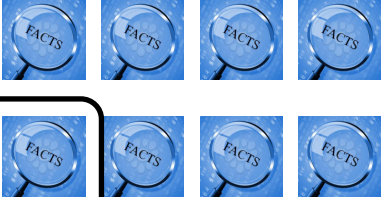

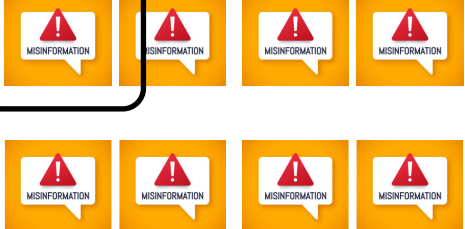

You search for information consistent with your belief, while ignoring information inconsistent with your belief.



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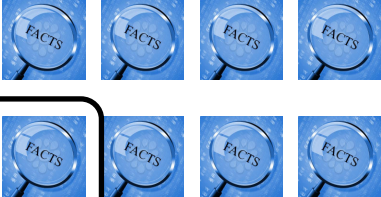

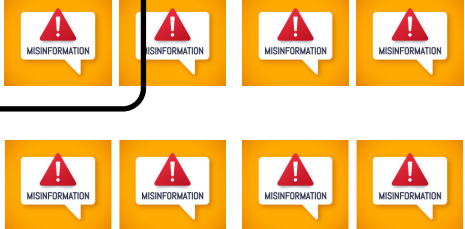



With the confirmation bias, you are only aware of a small bit of information that is consistent with your prior beliefs.

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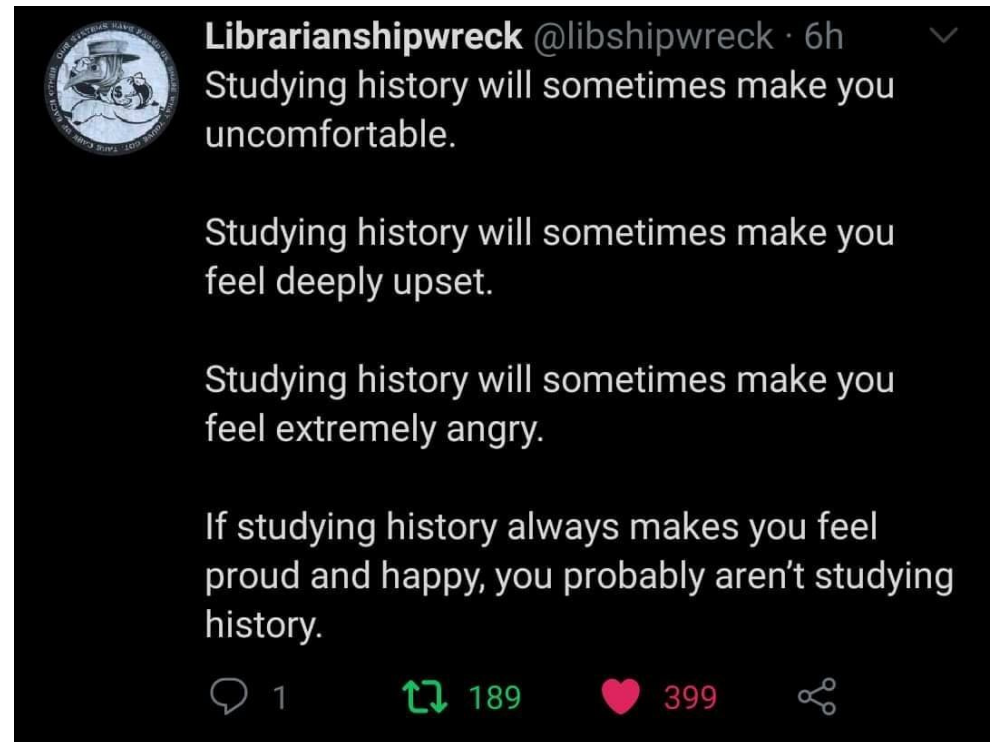
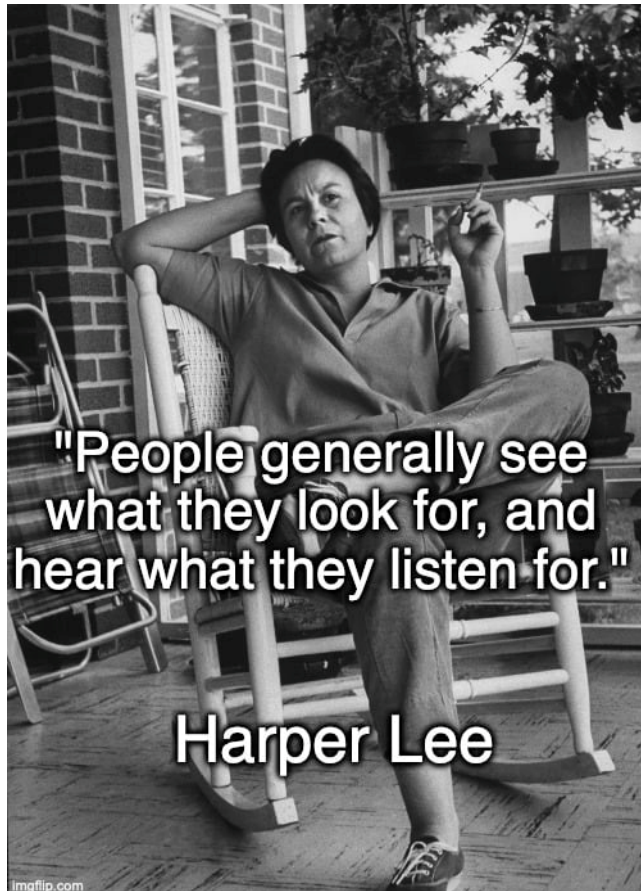
You search for information consistent with your belief, while ignoring information inconsistent with your belief.



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

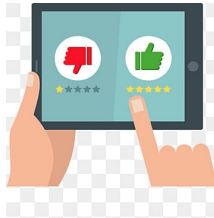
Searching for consistent information makes us feel good. Avoiding inconsistent information prevents anxiety.

## The Confirmation Bias



## **Belief-Bias**

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.



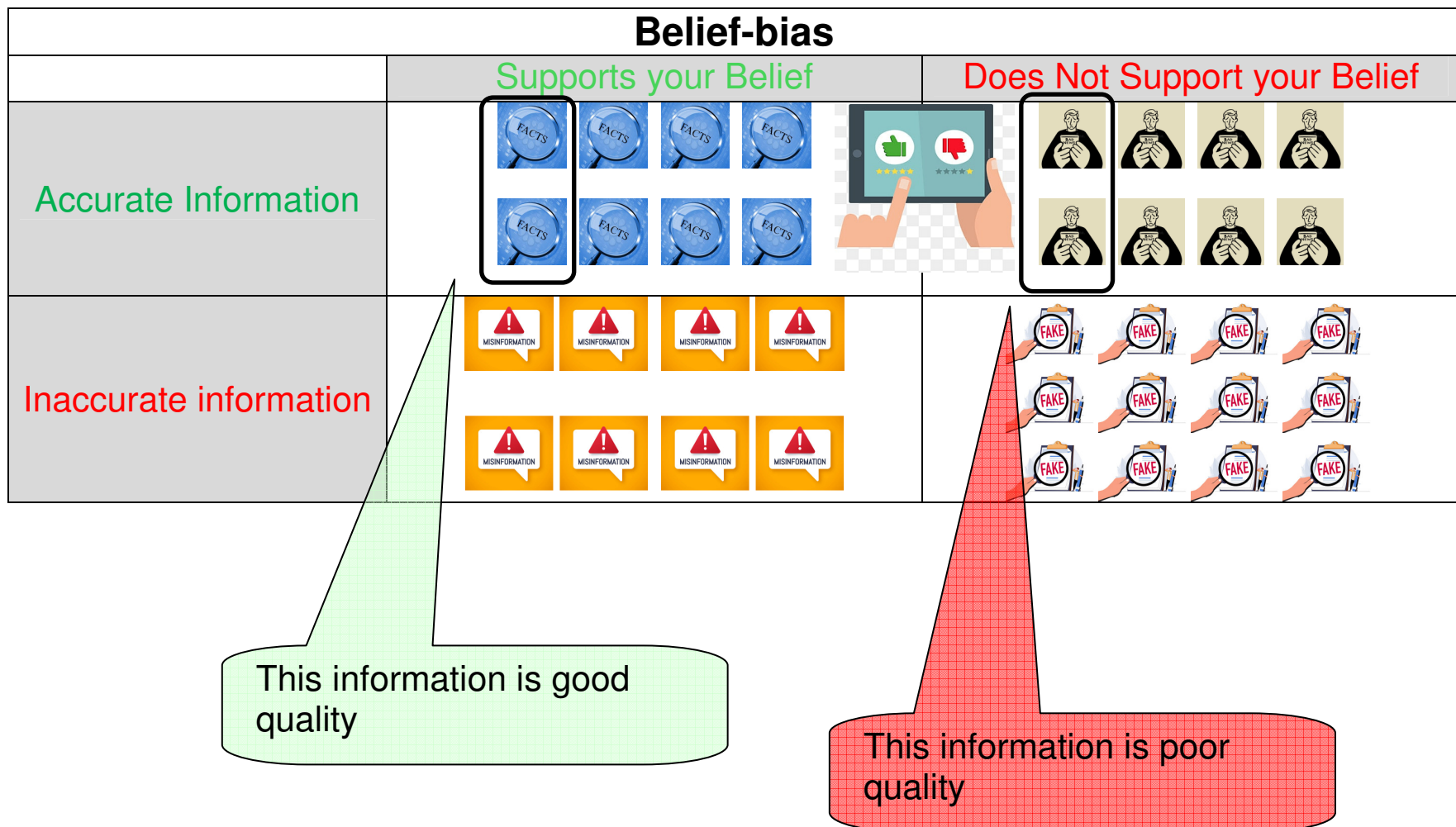
When evidence that supports and does not support your belief is available to you,

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



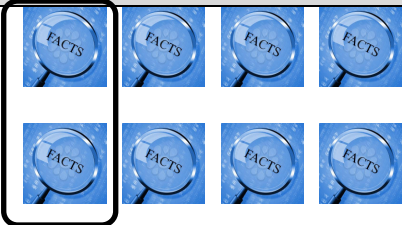
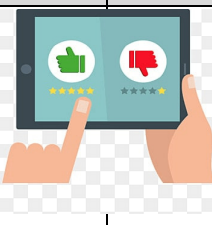




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Belief-bias		
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Accurate Information	 	 
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Due to the different standards used, your belief is strengthened.

This information is good quality

This information is poor quality

## The Belief-Bias

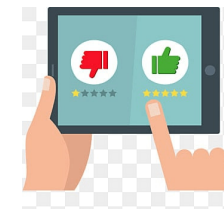
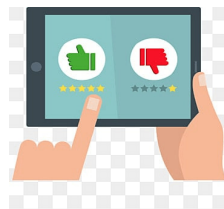
### Example 1: The Death Penalty

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.



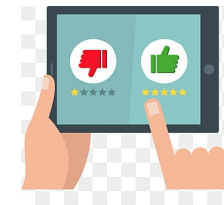
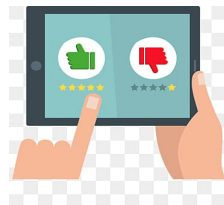
## Belief-Bias

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.

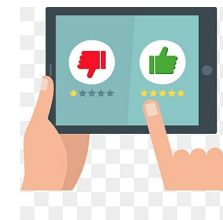
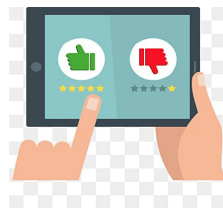
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<b>Good quality!</b>	<b>Poor quality</b>	<b>Poor quality</b>	<b>Good quality!</b>



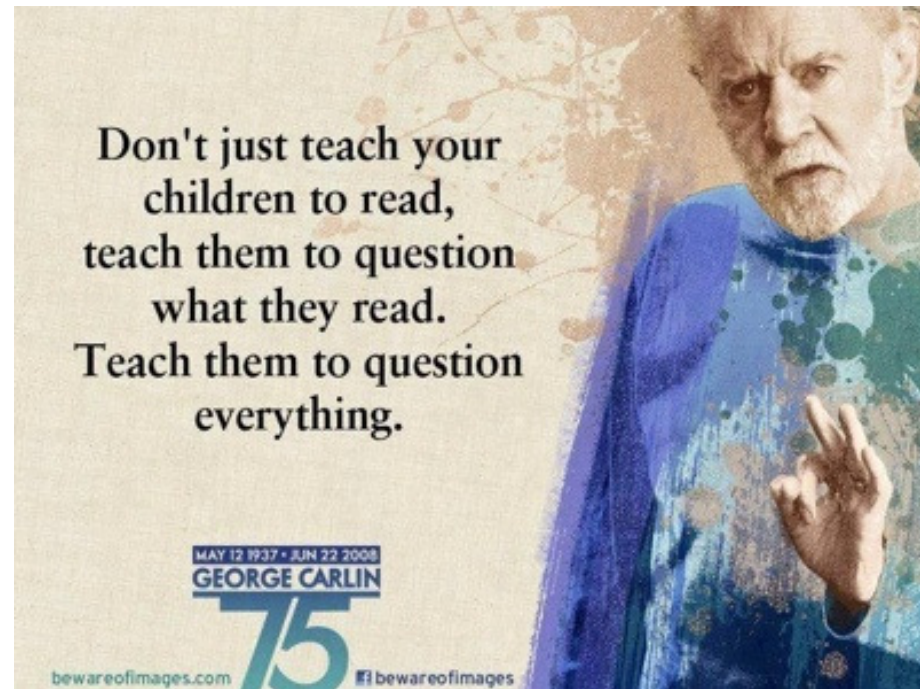
## The Belief-Bias

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.

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<b>Good quality!</b>	<b>Poor quality</b>	<b>Poor quality</b>	<b>Good quality!</b>



## 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.

## **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

- spontaneous 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.

In groups,

- Identify examples of the confirmation bias, belief-bias and how you would reduce them in the classroom or "real-life".
- From your example, how do these confirmation bias or belief-bias influence thinking, either helpful or harmful.
- We will share your examples with the class.