



ACTIVITY 5

Reducing Cognitive Biases

INVESTIGATION



Cognitive biases shape
how we see the world.



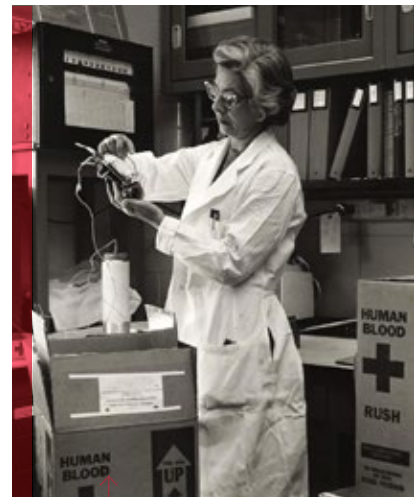
5 : REDUCING COGNITIVE BIASES

GUIDING QUESTION

How do cognitive biases shape everyday decisions?

INTRODUCTION

For a long time, cancer was thought to only have noninfectious causes. In the 1930s–1940s, Mexican-American microbiologist Sarah Stewart challenged this idea by proposing that viruses could cause cancer. Confirmation bias was one factor in the repeated rejection of her work. Her idea was finally accepted after her experiments showed that viruses could cause tumors in mice. Confirmation bias, as shown in this example, is a particular kind of cognitive bias. A **cognitive bias** is an unconscious and systematic error in thinking. Cognitive biases lead to conclusions that are off in a predictable way. In this activity, you will learn about three more common cognitive biases and how reducing cognitive biases is a part of an actively open mindset.



Scientist Sarah Stewart works in the laboratory, circa 1950.

CONCEPTUAL
TOOLS



MATERIALS LIST

FOR EACH GROUP
OF STUDENTS

— SET OF 7 SOUTHSAND
FEVER STORY CARDS

FOR EACH STUDENT

— STUDENT SHEET 5.1
"Evaluating Cognitive
Bias in Southsands
Fever Stories"

PROCEDURE

- 1 Your group will receive a set of 7 Southsands Fever Story cards. Have each member of your group read one of the fictional stories aloud until all 7 cards have been read.
- 2 Read the following descriptions of four common cognitive biases: confirmation bias, conflict of interest, conformity bias, emotion bias.

Confirmation Bias

The tendency for a person to seek out and interpret information in a way that supports their existing ideas.



What to look for:

- personal anecdotes
- cherry-picked information
- evidence and arguments all on one side
- alternatives are dismissed

Conflict of Interest

A **conflict of interest** is a situation in which an interest in the outcome may compromise a person's actions or conclusion.



What to look for:

- author is paid by a company that sells a related product
- offering information while also selling a product
- prioritizing loyalty to a person or organization
- recommendation by someone who stands to gain something

Conformity Bias

A **conformity bias** is a tendency for a person to change their thoughts and actions to fit in with the other people around them. This can be conscious or unconscious.



What to look for:

- trying to fit in with a group
- following trends because they're popular, regardless of if you like them
- pressuring nonconformers (*Everyone's doing it...*)

Emotion Bias

An **emotion bias** is a tendency for a person to depend on their emotions to make a conclusion.



What to look for:

- being driven by sympathy, fear, anger, or disgust
- urgent, sensational, or exaggerated language
- vividly described anecdotes that may or may not be representative of wider patterns

- 3 Work together to identify which cognitive bias(es) are present in each Southsand Fever Story card. Discuss how you think each story demonstrates this bias. Remember to listen to and discuss the ideas of other group members. If you disagree with others in your group, explain why you disagree. Record your ideas in the second and third columns on Student Sheet 5.1, "Evaluating Cognitive Bias in Southsand Fever Stories."
- 4 As a group, brainstorm 1–2 strategies to reduce each kind of cognitive bias described in the stories and record your responses in the last column on Student Sheet 5.1.

- 5 Compare your responses on Student Sheet 5.1 to the following actively open mindset summary. Circle the strategies on the student sheet that are part of an actively open mindset.

Actively Open Mindset

A metacognitive tool



Sources

Evaluate the credibility of your source.



Evidence

Seek out evidence for and against claims.



Alternatives

Consider alternative explanations.



New Information

Consider how new information might change your thinking.

- 6 Discuss the following questions with your group:
- How representative are the Southsland fever stories to real-world behavior?
 - How might you apply the strategies from Step 4 in your everyday life?
- 7 Share your responses to Step 6 with the class.

BUILD UNDERSTANDING

- ① With a partner, come up with your own everyday example for each cognitive bias presented in this activity. Choose one of the following activities to creatively communicate the bias.
- Write a narrative story.
 - Draw a picture or diagram.
 - Make a short video.
- ② The presentation of information may contain cognitive bias. Does that mean you should always doubt the information it provides? Why or why not?

CONNECTIONS TO EVERYDAY LIFE

- ③ Rage bait is a type of content that is designed to get a strong reaction from the viewer. The purpose is to spread ideas (often misinformation) or to generate engagement on social media. Explain which cognitive bias(es) from this activity could influence someone's reasoning when they see rage bait.
- ④ Many social media platforms use a format of a short video where the person posting speaks directly to the camera, which mimics having a personal conversation with the viewer. In addition, influencers often share stories about their lives, which makes their posts feel authentic and relatable.
 - a What cognitive bias(es) does this kind of format promote? Explain your answer.
 - b What might be some of the consequences of this cognitive bias?



A social media influencer recording at home.

EXTENSION

Look for cognitive biases from this activity in online posts. Share the post, the cognitive bias, and the misleading reasoning with family and friends. Explain why you think the cognitive bias is present in the post.

KEY SCIENTIFIC TERMS

cognitive bias
conflict of interest
conformity bias
emotion bias