



Evaluating Evidence

When it comes to critical thinking, simply gathering information isn't enough. What you do with that information matters. If you're trying to draw a conclusion or make a decision, evidence is what will help you get there. Think of it as the fuel for your thinking journey. But not all evidence has equal value or authority. And not all evidence is helpful or relevant. It's like breakfast. Doctors tell

us that the food we eat in the morning matters because it gives us energy for the day ahead. A glazed donut and a bowl of oatmeal are both breakfast foods, but they don't have the same nutritional value or effect on our energy levels. Evidence works the same way. Some information is fuel that will help us reach a decision. Other information distracts or misleads. This chapter explains how we can think about information and decide if it's important or valuable.

Social Media

For many people, social media is part of everyday life. And even when it's not, the things that happen on social media affect our larger communities and culture. Social media has become such a big part of our daily habits that scientists, psychologists, and doctors have started to study it. Each day, more information is available about how social media affects people and communities. A quick internet search reveals the many pros and cons of using this technology.

Yet, despite all this information, people often disagree about the role social media should play in our lives. Some people say it can be addictive and hurt our real-life relationships. Other people say social media helps us

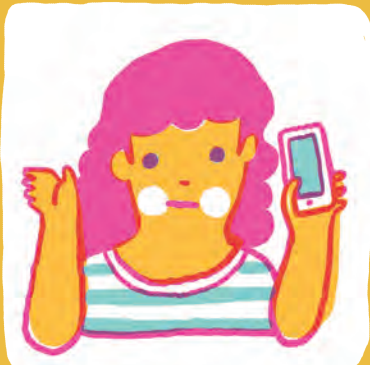
connect and communicate with others. We have access to the same information. So why do people still disagree about whether social media is good or bad?

THE BIG IDEA

PEOPLE USE EVIDENCE IN DIFFERENT WAYS. CRITICAL THINKERS EVALUATE THE IMPORTANCE, ACCURACY, AND RELEVANCY OF INFORMATION.



Let's look at social-media use. Here are some thoughts that different people may have about it.



@Teen

"All my friends use social media. Without it, how would I know what's going on?"



@YouTubeCelebrity

"I got my big break on social media!"



@Parent

"I like using social media to stay connected with my family. But I wish my kids didn't use it so much."



@SciencePro

"Social media isn't necessary for our lives. It's just entertainment. We should limit our use of it."



@Dog

#nocomment



@misinformation

"As long as I get the likes, I can say whatever I want."

One reason people come to different conclusions is they have unique points of view and experiences that influence the way they think about specific issues. (We'll get to this in chapter 5.) Another reason people with the same evidence draw different conclusions is that they evaluate the evidence differently. (Or sometimes people don't evaluate evidence at all. Yikes.)

Imagine you heard on social media that cats can bark like dogs. They just choose not to most of the time. Your first step is to do some basic fact-checking.

Fact-Checking 101

A fact is a statement that can be verified, while an opinion is a statement of belief.

"Apples have more than 4 grams of fiber per serving" is a fact.

 (You can verify this.)

 (This cannot be verified.)

"Apples are the world's best fruit" is an opinion.

When you fact-check information, it means you research it to figure out if it can be verified. Numbers, dates, names, and other details are relatively easy to check. But you'll also want to think about the conclusions that are drawn and if the main idea makes sense as a whole. Here are some questions to ask when you're fact-checking.

1. What's the source of the information?

In the barking cats example, the source is a tweet.

2. Is the source a primary or secondary source?

The person who sent the tweet hasn't actually heard a cat bark. She read about it somewhere. She's a secondary source.

3. If the source isn't a primary source, can you find a primary source?

Yes, the person who sent the tweet links to the website where she found the article. The article is also a secondary source. But the article includes an interview with a veterinarian who has heard cats bark. The vet is the primary source.



4. Does the primary source match what your secondary source (the tweet) told you?

Yes, the veterinarian confirms what the tweet said.

5. Are the primary and secondary sources trustworthy?

In this case, does the article have an author? Does the website appear to have a reputation for factual information? Is the veterinarian in the article a real person who is really a veterinarian?

6. Can I find other sources that support the primary source's evidence?

Yes, you're able to find other articles that provide similar information about barking cats, including other cat experts. Plus, you're able to find a few videos of cats barking.

How to Spot Fake News

The digital world is full of information. But have you ever thought about how easy it is to spread false information? Videos can be faked with editing apps. Online articles that look like news stories might actually be trying to sell you a product. Or worse! They might be meant to mislead or scare people. Even "news" stories can't always be trusted.

So what do we do?

Here's an example of a fake news story that was repeatedly shared on social media during President Obama's time in office. The story was completely made up, but many people believed it was true and kept sharing it on social media. Fake stories just like this continue to be shared today.



Not all articles you see online are factual or created by trustworthy sources. It's important to be able to tell the difference between advertising (sponsored content), real news stories, and fake news stories. Anytime you read an article, ask yourself the following questions. (Practice with the fake news article on the next page.)

1. Who wrote the article?

Ads or fake news stories often omit the author's name.



President Obama Signs Executive Order Banning Pledge of Allegiance

In a surprising move this week, President Obama signed an executive order banning the Pledge of Allegiance at all sporting events and public schools. Lawmakers on both sides of the aisle were stunned. “We were definitely caught off guard,” says a senator who wishes to remain anonymous. “But we plan to take it to court. The freedom to recite the pledge should never be taken away from anyone.” Under the new ban, anyone who is caught reciting the pledge in public or encouraging others to do so will be subject to a \$10,000 fine or up to 6 months in jail. At a press conference this morning, the President admitted that it was a difficult decision but said that he thought the language used in the pledge was “divisive” and created a “hostile environment” at sporting events. “The president was left with no other option,” Vice President Biden told reporters. “This is something that should’ve happened long ago.”

Like

Comment

Share

2. Can you find a bio for the writer?

Even if an author is listed, it's not necessarily the name of a real person. Try to find out more information about the author to see if he or she is real and trustworthy.

3. Has the writer written other articles that you're able to find?

This will help determine if the author is real and can be trusted.

4. What claims does the article make?

See if you can figure out the article's main idea and spot different statements that the author is making. Are these facts that you can check? Do they make sense together?

5. Where was the article published?

Some websites and sources are more trustworthy than others. It's also important to be aware of the bias that a source might have.

6. How does it make you feel?

It's normal to feel emotions like anger, fear, and joy when reading an article or watching a video. Real news stories can tap into our emotions just like advertising and fake news can. The difference with fake news is that its main purpose is to make you feel intense emotions such as anger or fear.

Fact-checking is an important step. But when you're evaluating evidence, you'll also want to dig deeper and look at what's being argued. In logic, an argument isn't a debate or angry conversation. It's a series of statements that are meant to support a particular conclusion.

Fallacies

An important part of evaluating evidence is recognizing the arguments that are being made. *Logical fallacies* are errors in thinking that weaken or discredit an argument. Like stereotypes, they're the lazy (and confused) way out of an argument. There are many types of logical fallacies. Let's use the statement, "I think social media should be outlawed because it's easy to misuse it," and see how someone might respond using the most common fallacies.

AD HOMINEM



Ad hominem is Latin for “to the man.” This type of argument focuses on attacking a person rather than addressing that person’s own argument or claim.

Well, you're a technophobe!

STRAW MAN



This type of argument misrepresents or exaggerates the ideas people are debating.

I can't believe you think perfectly nice people should be put in jail for using social media.

BANDWAGON ARGUMENT



This type of argument makes the claim that something must be true because it’s popular or many people believe it.

Everyone in my class is on social media, and they love it.

SLIPPERY SLOPE



This type of argument assumes that if one thing is allowed to happen, it will automatically cause a chain reaction.

No way. If we outlaw social media, then pretty soon real-life conversations will be illegal too.

RED HERRING



In this logical fallacy, instead of addressing the original argument, a person purposely introduces a new argument or claim as a distraction.

If you really cared about being healthy, you would exercise.

FALSE DILEMMA



This type of argument wrongly assumes that there are only two possible conclusions to a particular issue. This is sometimes called “black-or-white” thinking.

Well, we either outlaw social media and stay healthy, or we don't outlaw it, and we turn into mindless blobs.

APPEAL TO EMOTION



In this fallacy, instead of making a counterargument, a person makes claims that manipulate the other person's emotions.

That's mean. Think of how hard it will be for people to connect with relatives and friends who live far away.

QUESTIONABLE CAUSE



This type of argument wrongly assumes that because two different things happened at the same time, one of the things caused the other.

They outlawed social media, and bullying increased!

QUIZ: NAME THAT FALLACY!

Logical fallacies don't always sound wrong. That's why critical thinking is so important! Use what you've learned on pages 73–76 to identify the logical fallacies in the statements below. Then check out the answers on page 79.

1. “More than half the people in the U.S. believe in aliens, so they must be real.”

- a. Questionable cause
- b. Bandwagon argument
- c. False dilemma

2. “It's ok to cheat on this exam. Think of how upset your parents will be if you get a bad grade!”

- a. Slippery slope
- b. Red herring
- c. Appeal to emotion

3. “Well, you either support our political party, or you don't care about the country.”

- a. False dilemma
- b. Bandwagon argument
- c. Questionable cause



4. "If I don't finish this assignment, I won't get into college, and I'll never get a good job."

- a. Appeal to emotion
- b. Slippery slope
- c. Red herring

5. "Yesterday I had a headache, but then I drank some orange juice, and it went away. Orange juice is a great cure for headaches!"

- a. Questionable cause
- b. Red herring
- c. Bandwagon argument

6. "Mayor Shore thinks it's a good idea to raise taxes. She's not very smart."

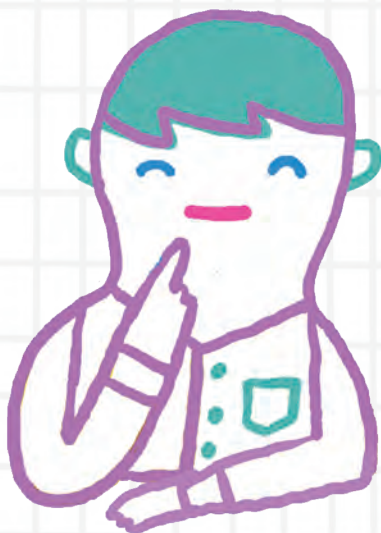
- a. False dilemma
- b. Ad hominem
- c. Slippery slope

7. "I know you're upset that you didn't get picked for the school musical, but think of all the schools that don't even have a drama club!"

- a. Red herring
- b. Appeal to emotion
- c. Questionable cause

8. "James says that sharks are his favorite animal. I can't believe he doesn't like dolphins!"

- a. Straw-man argument
- b. Ad hominem
- c. Bandwagon argument



a (8)
b (7)
c (6)
d (5)

a (4)
b (3)
c (2)
d (1)

ANSWERS



“It was a
BIG
wake-up call to
see **SO MANY**
people
AFFECTED BY
[the **AFTER SCHOOL** app]
in a **NEGATIVE** way.”



—**MOLLY ENGELS**, STUDENT ACTIVIST AND
PRESIDENT OF THE CAMPUS CLUB CYBER YOU

PORTRAIT OF A CRITICAL THINKER

RUTLAND HIGH STUDENTS

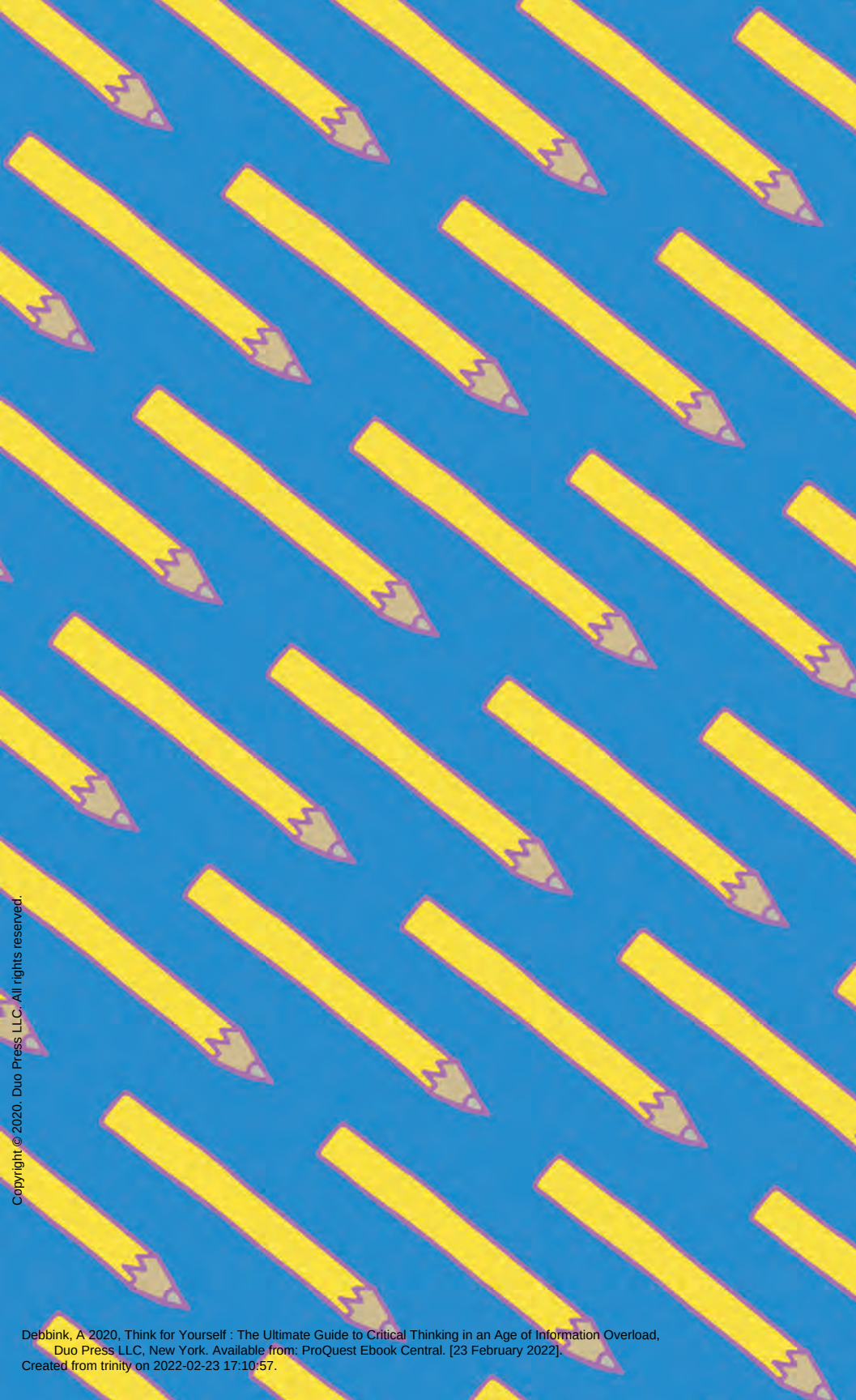
For students at Rutland High School in Vermont, social media opened the door to a big problem: cyberbullying. The popular app After School allowed students to post anonymously about things happening at the school. The creators claimed the app's purpose was to help school communities and students share information about events and local happenings. But at some schools, including Rutland High School, the app became a place where students posted hurtful and negative messages about each other. Many students started to experience intense bullying through the app. Rather than wait for administrators and parents to address the issue, students came together to find a solution. A student-run club called Cyber You promoted responsible digital citizenship. They worked with other students to create a two-part strategy. First they petitioned the app creators to delete their school's message board from the app. Then the students launched a positivity campaign at

their school. People were invited to write encouraging and positive messages to each other and post them around the school. The students' activism soon captured national attention. Vermont governor Peter Shumlin said, "The students' campaign makes me realize that people of all ages can do the right thing, and doing so can send a powerful message."



YOUR TURN

Let's practice evaluating evidence. What do you think about social-media use? Is it healthy or unhealthy, neither, or both? Spend 15 minutes doing some research on the topic. Write down all the claims you find on a piece of paper. Then use what you've learned in this chapter to evaluate the claims. Are you any closer to reaching a conclusion?



“You never **REALLY**
UNDERSTAND a
PERSON until you
CONSIDER THINGS from
his **POINT OF VIEW**...
until you **CLIMB** into
HIS SKIN and **WALK**
AROUND in it.”



—**HARPER LEE**, A WRITER WHO WON A
PULITZER PRIZE FOR HER NOVEL *TO KILL*
A MOCKINGBIRD, WHICH EXPLORED RACISM
DURING THE JIM CROW ERA