This module is an introduction to evaluating information. Topics covered include reliability, authority, and how to identify bias.
"Extraordinary claims require extraordinary evidence."
Carl Sagan

A Closer Look

Have you ever come across something and thought, "hmm, I don’t know about if I believe this?" Carl Sagan (kind of like the Neil DeGrasse Tyson of the ’70s and ’80s) once said, "Extraordinary claims require extraordinary evidence." If someone makes a claim and you’re unsure about it, check their work!
Expertise
The easiest way to think of authority is like a qualification. Authorities have extensive knowledge of their areas of expertise, and are actively engaged in larger conversations about what they specialize in.

Take a look at the video below. One of these characters is an authority on the law, while the other is not. Whose advice would you trust?

Hint: Not This Guy
Let's say you're watching Ancient Aliens on the History Channel. The guy with the wacky hair comes on, talks about how aliens made the pyramids, and then doesn't provide a lot of hard proof for his case. There is a reason for that.

People who are authorities on subjects have done the work necessary to be recognized as experts. This is more than just taking a test or sounding like you know what you talk about when you don't. Instead, experts are involved in ongoing explorations of their areas of interest.

To go back to our early example, then, the Ancient Aliens guy (Giorgio Tsoukalos) has a bachelor's degree in sports information and communication. While that degree might qualify him to talk about the best way to promote a bodybuilding contest, it should definitely raise a red flag about any
qualifications he may or may not have to speak at length about ancient history.

Show Your Work
Your peers are people with the same status as you. Peer review, the bread and butter of authority, is a process by which specialists analyze other specialists’ work. Experts on subjects research and produce information on the subjects they specialize in. When one expert submits an article to an academic journal, other experts review her work. This process helps to ensure that what’s being discussed has some credibility to it. In other words, you can trust that this expert did her homework!

Tell Me Again How
Factual peer reviewed science is worth less than your opinions on science
Check It Out

In the next section, you will be asked to determine whether or not the following three people are authoritative sources. Just select the answers you think are appropriate for the questions they ask.
Who Has Authority?
In this exercise, you'll need to determine whether or not the person is an authority on the subject they're talking about. What do you think?
Hey there! I'm Lorraine, and I'm a medical doctor. I'd like to talk to you about the best treatment options for an infection. Do you think I'm an appropriate authority?

1. You seem like an authority to me!

2. Sorry, but I think there are more qualified people than you to tell me about ways to treat an infection!
Hi there! I'm Dave, and I'm an accountant. I don't have a background in archaeology, but I watch *Ancient Aliens*. I'm sure aliens built the pyramids. Am I an authoritative source on archaeology?

1. Yes! I am absolutely convinced about your expertise on this subject. Please sign me up for your newsletter.

2. Not even a little bit.
Hi there! I'm Sukiyo, and I am a climate scientist. Am I an authoritative source on climate change?

1. Yes!
2. No!
Not All Sources Are Created Equal
Introduction

How many times have come across a piece of information and said, "Hmm, I'm not so sure about that"? Not every source you come across is as reliable as others. Here's an easy rule of thumb: the more reliable the source, the more likely it is that the claims it makes have been checked out.
Sources are like tools. You want to make sure you've got the best tool for the job, and research is no different. Even if a source seems pretty good, it might not be the best one for your needs. *Entertainment Weekly* might be great for popular culture, but maybe you should check somewhere else for in-depth analysis of new scientific developments!
Reliability and Unreliability

Reliable sources are ones that have proven themselves to be trustworthy. Unreliable sources, however, are just the opposite. When you're evaluating a source for reliability, ask yourself these questions.

- Is the author qualified to talk about this subject?
- Is the source obviously biased?
- Is the information up-to-date?
- Is the information verifiable?
Remember what Carl Sagan said: "Extraordinary claims require extraordinary evidence." When you’re evaluating information for a class, make sure you’re using accurate sources written by credible people! Also, just because I love picking on Ancient Aliens, here’s another example of Giorgio Tsoukalos, AKA the Ancient Aliens guy, in all his not-so-credible glory.
Introduction

Before we get into our discussion of bias, let's take a moment to see if you can recognize potential signs of bias. Take a look at the phrases below and sort them into piles. Drag the phrase to the "Biased" or "Unbiased" piles to find out more!

Biased

- So-and-so's position on a subject is awful! That person is the actual worst.
- Where do you like to party?
- How short is so-and-so?
- Why are immature teenagers so bad?
- So-and-so is really old! Why are there so many old people in this town?

Unbiased

- Here is so-and-so's position on this or that subject.
- What do you like to do on weekends?
What is so-and-so's height?

What are the main impacts on teenage behavior?

Such-and-such place has a higher population of senior citizens.

Let's examine this more. Click or tap on the items below for more information!

More Than a Feeling

We all have opinions and preferences, but good researchers know to set those aside when they're doing their work. A bias is an unfair attitude or belief about something. Bias can influence someone's work in many ways, and it gets exposed in many different ways.

Confirmation Bias

While it might seem like I'm picking on the Ancient Aliens guy, he's a good example of a very specific type of bias. In this case, "confirmation bias." Confirmation bias refers to times when we already assume to be true (especially when they're things that may need more proof on their own) dramatically influence how we interpret information. Confirmation bias creates an "echo chamber," a situation where someone only gets information that reinforces their views. Think of it like standing in a room with great acoustics. Once you say something, you keep hearing what you're saying reverberating over and over again.
For Example...

Here's an example. Let's say someone only views social media posts or news articles that back up beliefs that person already holds. By filtering out anything that contradicts or challenges that person's assumptions, that person has shut herself out of an important part of the research process. While there's nothing wrong with having an opinion, it's important to be able to recognize it as one!
Bias: A Closer Look

Here are two key reasons why being able to identify bias is important!

1. Being able to identify bias is an important tool! Not only will it make you a better researcher, but it will help you in all kinds of other ways: reading an article, watching a news broadcast, checking out a resource at work, in conversations with your peers, and more!

2. If you're able to identify bias, then you'll be able to think more carefully about how and why someone is doing or saying something. What is that person's real motive? Biased sources have an agenda, whether it's hidden or out in the open.
Lesson 5 of 10

Signs of Bias
Introduction

In this section, we'll take a look at some signs you might be encountering biased content. Sometimes it's pretty straightforward, but other times it's not so clear. The tips in this section will help you when you're maybe not so sure about how fair or accurate a piece of information really is.
Using misleading language is a clear sign of bias. This occurs when someone does something like trying to hide their true meaning, using different words to influence emotions, hiding details in fine print, or using evasive language to change or avoid a subject.
Misrepresenting Facts

Using misleading facts is another clear sign of bias. When someone presents factual information out of context, makes irrelevant comparisons, or otherwise tries to muddy the waters of discussion by playing fast and loose with something you can otherwise confirm.
Manipulating data is another common sign of bias. This happens when someone has a clear position s/he is trying to prove, but comes across data that might weaken an argument. To manipulate data, people might take unfair samples, make up numbers, or use unfair comparisons.
Picking and choosing is another obvious sign of bias. When someone picks and chooses information, that person takes whatever facts that support the claim she is trying to make while either downplaying or ignoring those that do not.
Outright Lying

Lying is a very clear sign of bias. When someone makes up information, presents information that runs contrary to the facts, or otherwise makes clearly false claims, then that is a good sign you are dealing with a biased source.
Summary

Sometimes bias is pretty obvious, but other times it can be hidden in plain sight. If you're ever unsure about something, then check another source. When in doubt, you can always ask a librarian!

Let's change things up a bit. Take a look at the video in this section. When you're done, we'll test something out!
Take a look at these graphs. Based on the video you just watched, which of the two do you think is better?

Misleading Graphs

Graph 1

Graph 2

○ Graph 1

○ Graph 2

SUBMIT
Least Reliable to Most Reliable

In this section, we're going to take a closer look at different sources and how reliable they are. For this exercise, we'll examine four of the most common sources you'll encounter. They move from less reliable to most reliable.

Social Media

Social media refers to websites and other online resources that enable users to share information. While it can be convenient, sharing content on social media can lead to bad information being circulated, since there's no one actively checking the facts. Examples include Facebook, Instagram, Tumblr, and Snapchat.

Popular Media

Popular media refers to information designed for the general public. These range from questionable to highly reliable sources, and they usually cover a broad range of general information. Examples include newspapers, TV shows, movies, glossy magazines, and those tabloids you see at the supermarket.
Professional Media

Professional media refers to publications and resources designed for people working in a certain field. Information covered in these sources is usually directed at professionals or experts in certain jobs. Examples include Business and Professional Communication Quarterly and the Journal of Professional Nursing.

Scholarly Media

Scholarly media refers to publications and resources designed for experts and specialists in certain fields. The topics covered are usually very specific and technical. Scholarly and professional publications are usually the best sources for college-level work. Examples include Ethics and the Journal of Molecular Biology.
Is It Reliable?
HOW TO SPOT FAKE NEWS

CONSIDER THE SOURCE
Click away from the story to investigate the site, its mission and its contact info.

READ BEYOND
Headlines can be outrageous in an effort to get clicks. What’s the whole story?

CHECK THE AUTHOR
Do a quick search on the author. Are they credible? Are they real?

SUPPORTING SOURCES?
Click on those links. Determine if the info given actually supports the story.

CHECK THE DATE
Reposting old news stories doesn’t mean they’re relevant to current events.

IS IT A JOKE?
If it is too outlandish, it might be satire. Research the site and author to be sure.

CHECK YOUR BIASES
Consider if your own beliefs could affect your judgement.

ASK THE EXPERTS
Ask a librarian, or consult a fact-checking site.
Are you unsure about a source or claim you come across? Sometimes biased and/or unreliable information can be hard to spot. Take a look at the tips on the left for more information. Here are some great websites you can use to check facts:

- FactCheck.org (www.factcheck.org)
- PolitiFact (www.politifact.com)
- Snopes (www.snopes.com)

If you're ever unsure, then don't be afraid to ask. Someone in the library will be glad to help you!
Fun with Acronyms

Despite the goofy name, the CRAAP Test (Currency, Relevance, Authority, Accuracy, and Purpose) is a great tool for evaluating information. It combines the concepts we've discussed so far, and it has the added benefit of being pretty memorable.

- **Currency**
  - How recent is the information?
  - When was the resource updated last?
  - Is it current enough for your topic?
Relevance

- How does the information pertain to your topic?
- Who is the target audience?
- How does the source present its information?
- Does it have anything to do with your subject?

Authority

- Who is the creator?
- What are the creator’s credentials?
- Who is the publisher or sponsor?
- Are they reputable?
- What is the publisher’s interest (if any) in this information?
- Are there advertisements?
Now let's put all of this information together. Here's a graphic so you can visualize the CRAAP Test!
When in doubt, ask yourself this: "Is it CRAAP?"
Does the item linked in this assessment pass the CRAAP Test?
NOW...Scientific Evidence on Effects of Smoking!

A medical specialist is making regular bl... monthly examinations of a group of people from various walks of life. 50 percent of this group have smoked Chesterfield for an average of over ten years.

After ten months, the medical specialist reports that he observed...

no adverse effects on the now, threat andINESS of the group from smoking Chesterfield.

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Thank You

Thanks for your time!
If you have any questions, then feel free to reach out!

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Now that we've taken a look at the first steps in evaluating sources, it's time to test what you've learned!

Before you can get credit for completing this module, you'll need to answer the multiple choice questions in the link below. Good luck!

Fill | Evaluating Information

This quiz is the final part of the Evaluating Information module. To receive credit, this section must be completed.
For this exercise, take a look at the images in this section. Do you think they're reliable or unreliable?