



Information Literacy in Action: Cognitive Biases

Can we really trust our perception? This post outlines some common ways that our brains perceive or interpret information in a way that does not produce accurate knowledge. Click the cards below to learn more about what cognitive biases are.

Definition

Cognitive bias occurs when our expectations and perceptions influence our evaluation of information. There are numerous cognitive biases, the following cards explore some of the most common.

Confirmation Bias

Confirmation bias involves only seeing evidence that confirms what you already believe or seeing evidence as confirming your existing beliefs.

Framing Bias

Framing bias involves the being influenced by the way information is presented. For example, pretend you are about to undergo a medical procedure. Which statement would you rather hear about the procedure?

- "Ninety percent of patients who undergo this procedure are alive at the five-year mark."
- "Ten percent of patients who undergo this procedure are deceased at the five-year mark."

Note that both statements present the same information.

Anchoring Bias

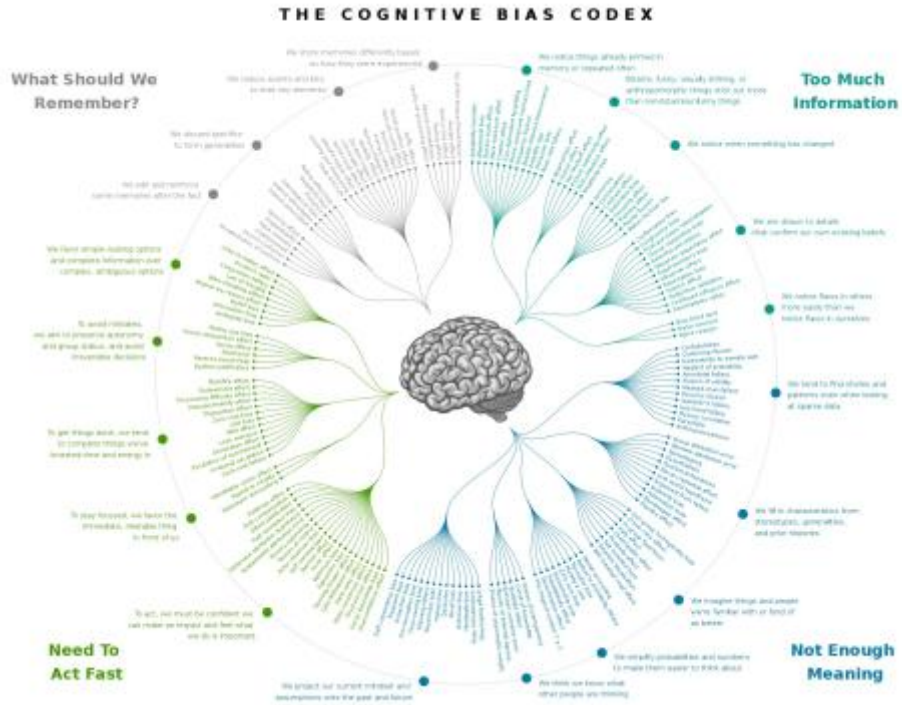
Suppose you are shopping for shoes and the first pair you see is \$100 and the second pair you see is \$50. The anchoring bias explains why the \$50 pair of shoes may seem like a good deal, even if the shoes are not actually worth \$50. Our minds tend to base further judgments on the first piece of information we receive.

Availability Heuristic

The availability heuristic is the tendency to rely more on information which can be easily retrieved from memory. For example, which is safer-- flying or driving? Many people think flying is more dangerous because plane crashes are memorable and come to mind easily. Car crashes are actually more frequent, but they are not as apparent to our minds.

False Consensus Bias

Have you ever assumed that someone else would have the same perspective on something that you have? This is called the false consensus bias. Since our own beliefs are readily accessible, we are influenced by the availability heuristic and more likely to think that others share our beliefs.



1 - Explore more cognitive biases with the [Cognitive Bias Codex by John Manoogian III](#). Use CTRL+ to zoom in on the image.

Example Application- Searching the Internet

Let's apply these ideas to the common practice of searching the internet for information. By recognizing cognitive biases, you can find the most accurate and reliable information. The examples for this section are derived from [Web Literacy for Student Fact-Checkers](#), a work by Michael A. Caulfield licensed CC 4.0 BY.



Confirmation Bias & Search Terms

women 78 cents on the dollar

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About 8,190,000 results (0.54 seconds)

www.78centsproject.com › the-gender-wage-gap ▼
The Gender Wage Gap – 78 Cents Project
Women in America make just **78 cents** for every **dollar** earned by American men. It's on all of us to end the wage gap. Are you ready to get to work?

www.washingtonpost.com › fact-checker › 2015/04/02 ▼
The 'Equal Pay Day' factoid that women make 78 cents for ...
Apr 2, 2015 – The 'Equal Pay Day' factoid that **women** make **78 cents** for every **dollar** earned by men.

money.cnn.com › economy › equal-pay-day-2015 ▼
78 cents on the dollar: The facts about the gender wage gap
Apr 14, 2015 – It may sound antiquated, but among full-time workers, **women** earn about **78 cents** to a man's **dollar**. That's according to the latest data from the ...

www.nationalpartnership.org › resources › fair-pay › a... ▼ PDF
America's Women and the Wage Gap - National Partnership ...
Sep 15, 2020 – paid **65 cents** for every **dollar** paid to men (a gap of **35 cents** for every **dollar**), while in Vermont, **women** are paid **91 cents** for every **dollar** paid to ...

www.forbes.com › sites › karinagness › 2016/04/12 › d... ▼
Don't Buy Into The Gender Pay Gap Myth - Forbes
Apr 12, 2016 – Using the statistic that **women** make **78 cents on the dollar** as evidence of rampant discrimination has been debunked over and over again. That ...

obamawhitehouse.archives.gov › equal-pay › myth ▼
Did You Know That Women Are Still Paid Less Than Men ...
On average, full-time working **women** earn just **78 cents** for every **dollar** a man earns. This significant gap is more than a statistic – it has real life consequences.

women 80 cents on the dollar

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About 38,500,000 results (0.57 seconds)

www.nationalpartnership.org › resources › fair-pay › a... PDF
America's Women and the Wage Gap - National Partnership ...
Sep 15, 2020 – In sales, **women** are paid just 68 **cents** for every **dollar** paid to men. In production, just 68 **cents**. In management, 77 **cents**. In service occupations, ...

www.aauw.org › news › media › press-releases › aauw-...
AAUW Report: Women Still Make 80 Cents on the Dollar ...
Apr 9, 2018 – AAUW Report: **Women Still Make 80 Cents on the Dollar** · Calls for Pay Equity Laws and Launches Landmark Initiative to Train 10 Million **Women** ...

www.vox.com › equal-pay-day-2019-gender-gap-equity
Equal Pay Day 2019: the wage gap is bigger than you've ...
Apr 2, 2019 – **Women** actually make 49 **cents** for every **dollar** men make, according to a report on ... You've heard that **women** make **80 cents** to men's **dollar**...

www.theatlantic.com › ideas › archive › 2018/11 › ho...
How Big Is the Male-Female Wage Gap, Really? - The Atlantic
Nov 28, 2018 – Do **women** earn **80 cents on the dollar** compared with men, as is commonly cited? Or is the pay gap just pennies, as one recent survey found?

www.businessinsider.com › Strategy › News
Wage gap, gender pay gap charts show how much more men ...
Aug 26, 2020 – In 2018, a **woman** working full time earned 81.6 **cents** for every **dollar** a ... White **women** earn **80%** of what white men do, while black **women** ...

3 - Google search results for "women 80 cents on the dollar"

Searching for something you already believe to be true can lead you to finding results that support that belief (confirmation bias). For example, if you search "women 78 cents on the dollar," you get results that say women make \$0.78 on the dollar compared to men. If you search "women 80 cents on the dollar," you get results that say women make \$0.80 on the dollar compared to men.

Searching for the more neutral term "wage gap" is more likely to provide balanced results.


How else can you avoid confirmation bias in your search terms?

Framing Bias & Search Terms

are we eating too much protein

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About 393,000,000 results (0.70 seconds)



Most research indicates that **eating** more than 2 g per kg of body weight daily of **protein** for a long time can cause health problems. Symptoms associated with **too much protein** include: intestinal discomfort and indigestion, dehydration. Aug 21, 2018

www.medicalnewstoday.com › articles

How do you know if you are eating too much protein?

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www.health.harvard.edu › nutrition › when-it-comes-to...

When it comes to protein, how much is too much? - Harvard ...

Mar 30, 2020 — Can **too much protein** be harmful? The short answer is yes. As with most things in life, there can be **too much** of a good thing and if you **eat too much protein**, there may be a price to pay. For example, people that **eat very high protein** diets have a higher risk of kidney stones.

www.bbc.com › future › article › 20180522-we-dont-n...

We don't need nearly as much protein as we consume - BBC ...

May 22, 2018 — Fortunately, it's difficult to have **too much protein**. While **we** do have an upper limit of protein intake, it's "virtually impossible" to reach, says Tipton.

www.healthline.com › health › too-much-protein

What Happens If You Eat Too Much Protein? - Healthline

However, **high-protein** diets have also been associated with several risks that are important to be aware of and understand. Nutritional experts don't advocate ...

4 - Google search results for "are we eating too much protein"

protein nutrition

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About 580,000,000 results (0.91 seconds)

Protein is a macronutrient that provides four calories per gram. Along with carbohydrates and fats, **protein** is one of our primary sources of energy. The body also uses **protein** to perform the following functions: Tissue development, including muscle, bone, and skin.

www.myfooddiary.com › nutrients › protein

Protein - Nutrition Facts Labels Explained by MyFoodDiary

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People also ask

What is the role of protein in nutrition?

Is eating protein good for you?

What foods are high in protein?

How much protein a day is bad for you?

Feedback

www.hsph.harvard.edu › ... › What Should I Eat?

Protein | The Nutrition Source | Harvard T.H. Chan School of ...

What is **protein**? **Protein** is found throughout the body—in muscle, bone, skin, hair, and virtually every other body part or tissue. It makes up ...

What is protein? · How much protein do I need? · Research on protein and ...

www.nutrition.gov › topics › whats-food › proteins

Proteins - Nutrition.gov

Read about **protein** - what it does, where it is found, and how to use the **Nutrition** Facts Label to monitor the **protein** in your diet. Dietary **Proteins**. HHS, National ...

www.nutrition.org.uk › nutrients-food-and-ingredients

Protein - British Nutrition Foundation

5 - Google search results for "protein nutrition"

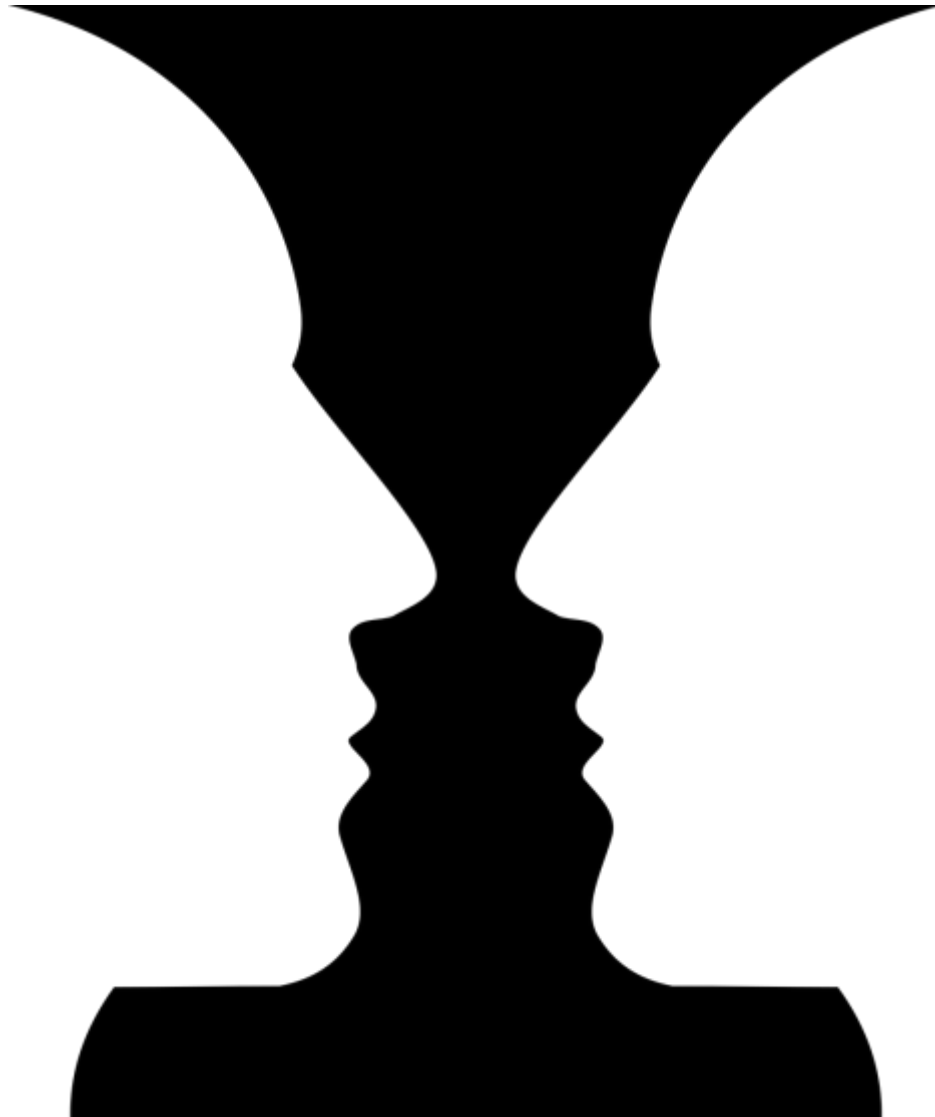
Notice the difference between the search terms "are we eating too much protein" and "protein nutrition." The first gives results that indicate eating too much protein is bad. Authors that have this viewpoint are more likely to use the words "too much prote in" than people who do not.

The search "protein nutrition" gives results that are more neutral.

Only using terms that frame a topic a certain way will produce biased results. It is similar to asking a leading question (Did you have a great day?) vs. a neutral question (How was your day?).

Can you think of a topic where framing bias might be hiding in your search terms? How can you make them more neutral?

Anchoring Bias & Search Results



6 - Optical illusion of two faces or a cup.

When searching, you may be tempted to click on the first result you see, which can lead you to the anchoring bias and cause you to frame all other search results within the context of the first. To avoid this, think about what types of information you want to find and what makes an authoritative source *before* you search. If you don't see the types of sources you were expecting, reformulate your search.

Consider how search engines choose which results to put first. Is it based on accuracy, relevance or popularity? If it is based on popularity, how does that influence the accuracy or relevance of the source?

Availability Heuristic & Evaluating Information



When reading an informative source, it may not feel natural to question the information being presented. Since what you are reading is the most available information to your mind at the moment, it is likely to dominate your thinking. Try to outline the author's argument and then question each point of the argument. Actively search for information that opposes the information presented so you can get a balanced view of the topic.

How else might the availability heuristic affect how you seek and read information?

False Consensus Bias & Evaluating Information



When reading information that opposes your personal viewpoint, you may be more likely to dismiss the author's arguments. Since false consensus bias leads us to believe that others think the same way we do, it can be hard to accept that others have different beliefs that are also valid.

To avoid the false consensus bias, approach the information like a scientist with a hypothesis. Acknowledge your hypothesis and be willing to accept that the hypothesis may be wrong. In science, a wrong hypothesis is celebrated as learning something new. Let it be the same with exploring information.

Why might you want to avoid the false consensus bias?

Learn more about using information literacy in your daily life by contacting a librarian at <https://ecok.libguides.com/students>

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