**Logical Fallacies**

Spot a Dishonest Argument and Avoid Misleading Others Have you ever heard an argument or a statement that was presented as fact, that just didn't ring true?

Perhaps the statement seemed to jump to a wild conclusion, or the argument being presented was based on evidence that couldn't easily be validated or was out of context.

These kinds of statements are often referred to as Logical Fallacies. Essentially, an argument that is built on flawed reasoning, and that – when you apply logic – is discovered to be false.

**Types of Logical Fallacies**

Logical fallacies are flawed, deceptive, or false arguments that can be proven wrong with reasoning. These are the most common fallacies you should know about.

Arguments and debates are an important part of college and academic discourse. But not every argument is perfect. Some can be picked apart because they have errors in reasoning and rhetoric. These are called "logical fallacies," and they're very common.

You'll hear logical fallacies in the classroom, during televised debates, and in arguments with your friends. It can even be challenging to avoid using them yourself.

This section lays out some of the most common logical fallacies and how to identify them.

What Is a Logical Fallacy?

Logical fallacies are flawed, deceptive, or false arguments that can be proven wrong with reasoning. There are two main types of fallacies:

A formal fallacy is an argument with a premise and conclusion that doesn't hold up to scrutiny.

An informal fallacy is an error in the form, content, or context of the argument.

15 Types of Logical Fallacies

* Ad Hominem
* Strawman Argument
* Appeal to Ignorance
* False Dilemma
* Slippery Slope Fallacy
* Circular Argument
* Hasty Generalization
* Red Herring Fallacy
* Appeal to Hypocrisy
* Causal Fallacy
* Fallacy of Sunk Costs
* Appeal to Authority
* Equivocation
* Appeal to Pity
* Bandwagon Fallacy

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Ad Hominem

An ad hominem fallacy uses personal attacks rather than logic. This fallacy occurs when someone rejects or criticizes another point of view based on the personal characteristics, ethnic background, physical appearance, or other non-relevant traits of the person who holds it.

Ad hominem arguments are often used in politics, where they are often called "mudslinging." They are considered unethical because politicians can use them to manipulate voters' opinions against an opponent without addressing core issues.

EXAMPLE 1

"All people from Crete are liars."

Straw Man

A straw man argument attacks a different subject rather than the topic being discussed — often a more extreme version of the counter argument. The purpose of this misdirection is to make one's position look stronger than it actually is.

The straw man argument is appropriately named after a harmless, lifeless scarecrow. Instead of contending with the actual argument, they attack the equivalent of a lifeless bundle of straw — an easily defeated puppet that the opponent was never arguing for in the first place.

EXAMPLE 1

"Quite the contrary: The Senator thinks the environment is such a wreck that no one's car choice or driving habits would make the slightest difference."

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Appeal to Ignorance

An appeal to ignorance (also known as an "argument from ignorance") argues that a proposition must be true because it has not been proven false or there is no evidence against it.

The argument can be used to bolster multiple contradictory conclusions at once, such as the following two claims:

"No one has ever been able to prove that extraterrestrials exist, so they must not be real."

"No one has ever been able to prove that extraterrestrials do not exist, so they must be real."

An appeal to ignorance doesn't prove anything. Instead, it shifts the need for proof away from the person making a claim.

Which of the following examples is an appeal to ignorance?

EXAMPLE 1

"We have no evidence that the Illuminati ever existed. They must have been so clever that they destroyed all the evidence."

EXAMPLE 2

"I know nothing about Tank Johnson except that he has a criminal record as long as your leg, but I'll bet he's really just misunderstood."

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False Dilemma/False Dichotomy

A false dilemma or false dichotomy presents limited options — typically by focusing on two extremes — when in fact more possibilities exist. The phrase "America: Love it or leave it" is an example of a false dilemma.

The false dilemma fallacy is a manipulative tool designed to polarize the audience, promoting one side and demonizing another. It's common in political discourse as a way of strong-arming the public into supporting controversial legislation or policies.

See if you can come up with a third option that these examples failed to mention.

EXAMPLE 1

"Either we go to war or we appear weak."

EXAMPLE 2

"Either you love me or you hate me."

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Slippery Slope

A slippery slope argument assumes that a certain course of action will necessarily lead to a chain of future events. The slippery slope fallacy takes a benign premise or starting point and suggests that it will lead to unlikely or ridiculous outcomes with no supporting evidence.

You may have used this fallacy on your parents as a teenager: "But you have to let me go to the party! If I don't go to the party, I'll be a loser with no friends. Next thing you know, I'll end up alone and jobless, living in your basement when I'm 30!"

Which of these examples is a slippery slope fallacy and which is not?

EXAMPLE 1

"Your coach's policy is that no one can be a starter on game day if they miss practice. So if you miss basketball practice today, you won't be a starter in Friday's game. Then you won't be the first freshman to start on the varsity basketball team at our school."

EXAMPLE 2

"If you miss practice, it means you were probably goofing off. People who goof off drop out of school and end up penniless."

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Circular Argument

Circular arguments occur when a person's argument repeats what they already assumed before without arriving at a new conclusion. For example, if someone says, "According to my brain, my brain is reliable," that's a circular argument.

Circular arguments often use a claim as both a premise and a conclusion. This fallacy only appears to be an argument when in fact it's just restating one's assumptions.

See if you can identify which of these is a circular argument.

EXAMPLE 1

"Smoking pot is against the law because it's wrong; I know it's wrong because it is against the law."

EXAMPLE 2

"Smoking pot is against the law; this leads many to believe it is wrong."

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Hasty Generalization

A hasty generalization is a claim based on a few examples rather than substantial proof. Arguments based on hasty generalizations often don't hold up due to a lack of supporting evidence: The claim might be true in one case, but that doesn't mean it's always true.

Hasty generalizations are common in arguments because there's a wide range of what's acceptable for "sufficient" evidence. The rules for evidence can change based on the claim you're making and the environment where you are making it — whether it's rooted in philosophy, the sciences, a political debate, or discussing house rules for using the kitchen.

Which of the following is a hasty generalization?

EXAMPLE 1

"Some people vote without seriously weighing the merits of the candidate."

EXAMPLE 2

"People nowadays only vote with their emotions instead of their brains."

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Red Herring

A red herring is an argument that uses confusion or distraction to shift attention away from a topic and toward a false conclusion. Red herrings usually contain an unimportant fact, idea, or event that has little relevance to the real issue.

Red herrings are a common diversionary tactic when someone wants to shift the focus of an argument to something easier or safer to address. But red herrings can also be unintentional.

Which of the following examples is a red herring fallacy?

EXAMPLE 1

"My roommate wants to talk about cleaning out the garage, so I asked her what she wants to do with our patio furniture. Now she's shopping for new patio furniture and not asking me about the garage."

EXAMPLE 2

"My wife wants to talk about cleaning out the garage, so I asked her what she wants to do with the patio furniture, because it's just sitting in the garage taking up space."

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Appeal to Hypocrisy

An appeal to hypocrisy — also known as the tu quoque fallacy — focuses on the hypocrisy of an opponent. The tu quoque fallacy deflects criticism away from oneself by accusing the other person of the same problem or something comparable.

The tu quoque fallacy is an attempt to divert blame. The fallacy usually occurs when the arguer uses apparent hypocrisy to neutralize criticism and distract from the issue.

Which of the following is an appeal to hypocrisy?

EXAMPLE 1

"But, Dad, I know you smoked when you were my age, so how can you tell me not to do it?"

EXAMPLE 2

"Son, yes, I smoked when I was your age. It was dumb then and it's dumb now. That's why I forbid you to smoke, chew, vape, use nicotine gum, or do whatever you kids do with tobacco these days."

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Causal Fallacy

Causal fallacies are informal fallacies that occur when an argument incorrectly concludes that a cause is related to an effect. Think of the causal fallacy as a parent category for other fallacies about unproven causes.

One example is the false cause fallacy, which is when you draw a conclusion about what the cause was without enough evidence to do so. Another is the post hoc fallacy, which is when you mistake something for the cause because it came first — not because it actually caused the effect.

Which kind of causal fallacy is at work in these examples?

EXAMPLE 1

"Jimmy isn't at school today. He must be on a family trip."

EXAMPLE 2

"Every time a rooster crows, the sun comes up. Crows must be the creators of the universe."

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Sunk Cost

A sunk cost fallacy is when someone continues doing something because of the effort they already put in it, regardless of whether the additional costs outweigh the potential benefits. "Sunk cost" is an economic term for any past expenses that can no longer be recovered.

For example: Imagine that after watching the first six episodes of a TV show, you decide the show isn't for you. Those six episodes are your "sunk cost." A sunk cost fallacy would be deciding to finish watching anyway because you've already invested roughly six hours of your life in it.

Which of these is a sunk cost fallacy and which is not?

EXAMPLE 1

"I know this relationship isn't working anymore and that we're both miserable. No marriage. No kids. No steady job. But I've been with him for seven years, so I'd better stay with him."

EXAMPLE 2

"I'm halfway done with college. This is so tough, and it's not nearly as fun as I thought it would be, but I don't know. I guess I'll finish it and get my degree."

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Appeal to Authority

Appeal to authority is the misuse of an authority's opinion to support an argument. While an authority's opinion can represent evidence and data, it becomes a fallacy if their expertise or authority is overstated, illegitimate, or irrelevant to the topic.

For example, citing a foot doctor when trying to prove something related to psychiatry would be an appeal to authority fallacy.

How do these statements mishandle authorities?

EXAMPLE 1

"Because Martin Sheen played the president on television, he'd probably make a great president in real life."

EXAMPLE 2

"One day robots will enslave us all. It's true. My computer science teacher says so."

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Equivocation

Equivocation happens when a word, phrase, or sentence is used deliberately to confuse, deceive, or mislead. In other words, saying one thing but meaning another.

When it's poetic or comical, we call this a "play on words." But when it's done in a political speech, an ethics debate, or an economics report — and it's designed to make the audience think you're saying something you're not — that's when it becomes a fallacy.

How does each of these examples commit an equivocation fallacy?

EXAMPLE 1

"His political party wants to spend your precious tax dollars on big government. But my political party is planning strategic federal investment in critical programs."

EXAMPLE 2

"I don't understand why you're saying I broke a promise. I said I'd never speak to my ex-girlfriend again. And I didn't. I just sent her some pictures and text messages."

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Appeal to Pity

An appeal to pity relies on provoking your emotions to win an argument rather than factual evidence. Appealing to pity attempts to pull on an audience's heartstrings, distract them, and support their point of view.

Someone accused of a crime using a cane or walker to appear more feeble in front of a jury is one example of appeal to pity. The appearance of disability isn't an argument on the merits of the case, but it's intended to sway the jury's opinion anyway.

Such of these is a fallacious appeal to emotion and which one is not?

EXAMPLE 1

"Professor, you have to give me an A on this paper. I know I only turned in a sentence and some clip art, but you have to understand, my grandmother suddenly died while traveling in the Northern Yukon, and her funeral was there so I had to travel, and my parents got divorced in the middle of the ceremony, and all the stress caused me to become catatonic for two weeks. Have some pity — my grandmother's last wish was that I'd get an A in this class."

EXAMPLE 2

"Professor, I know this work was subpar, and I feel pretty bad about it. I'd like to schedule a meeting with you to discuss how I can do better on our next assignment."

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Bandwagon Fallacy

The bandwagon fallacy assumes something is true (or right or good) because others agree with it. In other words, the fallacy argues that if everyone thinks a certain way, then you should, too.

One problem with this kind of reasoning is that the broad acceptance of a claim or action doesn't mean that it's factually justified. People can be mistaken, confused, deceived, or even willfully irrational in their opinions, so using them to make an argument is flawed.

Which of these is a bandwagon fallacy?

EXAMPLE 1

"Almost everyone at my school will be at the party Friday night. It must be a popular thing to do."

EXAMPLE 2

"Almost everyone at my school will be at the party Friday night. It must be the right thing to do."

Final Word

We hope this primer on logical fallacies helps you to navigate future disputes with friends, family, and online acquaintances without descending into vitriol or childish name-calling.