



Christ-Centered Critical Thinking

Lesson 7: Logical Fallacies



Learning Outcomes

In this lesson we will:

1. Define logical fallacy using the SEE-I.
2. Understand and apply the concept of relevance.
3. Define, understand, and recognize fallacies of relevance.
4. Define, understand, and recognize fallacies of insufficient evidence.

What is a logical fallacy?

Complete the SEE-I.

S = A logical fallacy is a mistake in reasoning.

E =

E =

I =



strawman

Misrepresenting or exaggerating someone's argument to make it easier to attack.



false cause

Presuming that a real or perceived relationship between things means that one is the cause of the other.



slippery slope

Asserting that if we allow A to happen, then Z will consequently happen too, therefore A should not happen.



ad hominem

Attacking your opponent's character or personal traits instead of engaging with their argument.



special pleading

Moving the goalposts or making up exceptions when a claim is shown to be false.



loaded question

Asking a question that has an assumption built into it so that it can't be answered without appearing guilty.



the gambler's fallacy

Believing that 'runs' occur to statistically independent phenomena such as roulette wheel spins.



bandwagon

Appealing to popularity or the fact that many people do something as an attempted form of validation.



appeal to emotion

Manipulating an emotional response in place of a valid or compelling argument.



the fallacy fallacy

Presuming that because a claim has been poorly argued, or a fallacy has been made, that it is necessarily wrong.



tu quoque

Avoiding having to engage with criticism by turning it back on the accuser - answering them with criticism.



personal incredulity

Saying that because one finds something difficult to understand that it's therefore not true.



burden of proof

Saying that the burden of proof lies not with the person making the claim, but with someone else to disprove.



ambiguity

Using double meanings or ambiguities of language to mislead or misrepresent the truth.



black-or-white

Where two alternative states are presented as the only possibilities, when in fact more possibilities exist.



begging the question

A circular argument in which the conclusion is included in the premise.



appeal to authority

Using the opinion or position of an authority figure, or institution of authority, in place of an actual argument.



composition/division

Assuming that what's true about one part of something has to be applied to all, or other, parts of it.



no true scotsman

Making what could be called an appeal to purity as a way to dismiss relevant criticisms or flaws of an argument.



genetic

Judging something good or bad on the basis of where it comes from, or from whom it comes.



appeal to nature

Making the argument that because something is 'natural' it is therefore valid, justified, inevitable, or ideal.



anecdotal

Using personal experience or an isolated example instead of a valid argument, especially to dismiss statistics.



the texas sharpshooter

Cherry-picking data clusters to suit an argument, or finding a pattern to fit a presumption.



middle ground

Saying that a compromise, or middle point, between two extremes is the truth.

thou shalt not commit logical fallacies

A logical fallacy is often what has happened when someone is wrong about something. It's a flaw in reasoning. They're like tricks or illusions of thought, and they're often very sneakily used by politicians, the media, and others to fool people. Don't be fooled! This poster has been designed to help you identify and call out dodgy logic wherever it may raise its ugly, incoherent head. If you see someone committing a logical fallacy online, link them to the relevant fallacy to school them in their awesomeness e.g. yourlogicalfallacyis.com/strawman. More in-depth explanations and examples of these fallacies can also be found at the website.

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<http://1.bp.blogspot.com/-o9VE5tseuFk/T5FSHiNu7I/AAAAAAAAABIY/Ws7iCn-wJNU/s1600/Logical+Fallacy.JPG>

The Concept of Relevance

The concept of relevance: a statement for or against another statement. A statement is relevant to a claim (i.e. another statement or premise) if it provides some reason or evidence for thinking the claim is either true or false.

Three ways a statement can be relevant:

1. A statement is *positively* relevant to a claim if it counts in favor of the claim.
2. A statement is *negatively* relevant to a claim if it counts against the claim.
3. A statement is *logically* irrelevant to a claim if it counts neither for or against the claim.

Two observations concerning the concept of relevance.

1. Whether a statement is relevant to a claim usually depends on the context in which the statement is made.
2. A statement can be relevant to a claim even if the claim is false.

Fallacies of Relevance

- Personal attack or *ad hominem*
- Scare tactic
- Appeal to pity
- Bandwagon argument
- Strawman
- Red herring
- Equivocation
- Begging the question



strawman

Misrepresenting someone's argument to make it easier to attack.

By exaggerating, misrepresenting, or just completely fabricating someone's argument, it's much easier to present your own position as being reasonable or valid, but this kind of dishonesty serves to undermine rational debate.

After Will said that we should put more money into health and education, Warren responded by saying that he was surprised that Will hates our country so much that he wants to leave it defenceless by cutting military spending.



ad hominem

Attacking your opponent's character or personal traits instead of engaging with their argument.

Ad hominem attacks can take the form of overtly attacking somebody, or more subtly casting doubt on their character. The result of an ad hom attack can be to undermine someone without actually having to engage with their argument.

After Sally presents an eloquent and compelling case for a more equitable taxation system, Sam asks the audience whether we should believe anything from a woman who isn't married, was once arrested, and smells a bit weird.



slippery slope

Asserting that if we allow A to happen, then Z will consequently happen too, therefore A should not happen.

The problem with this reasoning is that it avoids engaging with the issue at hand, and instead shifts attention to baseless extreme hypotheticals. The merits of the original argument are then tainted by unsubstantiated conjecture.

Colin Closet asserts that if we allow same-sex couples to marry, then the next thing we know we'll be allowing people to marry their parents, their cars and Bonobo monkeys.



black-or-white

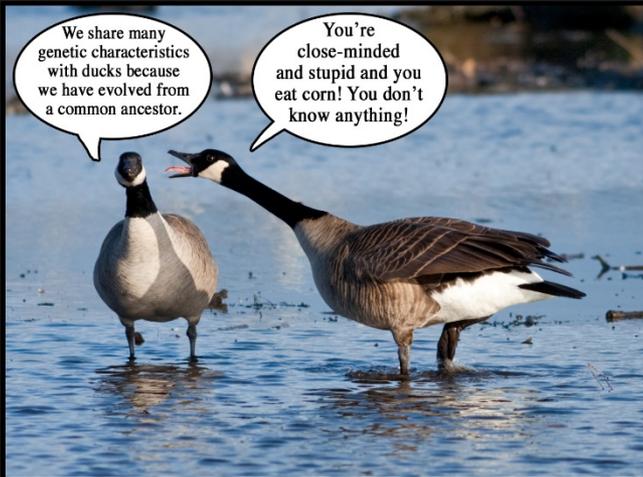
Where two alternative states are presented as the only possibilities, when in fact more possibilities exist.

Also known as the false dilemma, this insidious tactic has the appearance of forming a logical argument, but under closer scrutiny it becomes evident that there are more possibilities than the either/or choice that is presented.

Whilst rallying support for his plan to fundamentally undermine citizens' rights, the Supreme Leader told the people they were either on his side, or on the side of the enemy.

<http://www.professordarnell.com/wp-content/uploads/2012/05/fallacies.jpg>

Logical Fallacies



The *Ad Hominem*

https://farm5.staticflickr.com/4038/4550001017_fb3fc3ec27_o.jpg

When a person rejects another person's argument or claim by attacking the person rather than the argument of claim he or she commits an *ad hominem* fallacy or personal attack. Five types of *ad hominem* fallacies:

1. Attacking the Motive
2. Inconsistency or Look Who's Talking (*Tu Quoque*)
3. Two Wrongs make a Right
4. Circumstantial
5. Poisoning the Well

Scare Tactics

The scare tactics fallacy is committed when a speaker or presenter threatens harm to a reader or listener if he or she does not accept the speaker's conclusion.

Examples:

Conversation among politicians: We both agree that we are the rightful rulers of the Ideal Islands. It would be regrettable if we had to send troops to the Island to convince the citizens.

Conversation at the supermarket checkout line: The same sex bill is wrong for our state and any politician who supports it will find out how wrong he or she is at the next election.

Appeal to Pity

The fallacy of appeal to pity is committed when a person inappropriately attempts to evoke feelings of pity or compassion from his or her readers or listeners.

Examples:

Student to coach: I admit that I cannot run, punt, pass, kick, catch, block or tackle, I deserve a spot on the team. If I don't make the team I will be an emotional wreck, and drop out of school.

Mother to child: Your grandmother was asking about you the other day. Since Grandpa passed away, her Alzheimer's seems to be getting worse every day. She has done so much for you, don't you think you could pay her a visit.

The first example is a fallacy, the second is not. Emotional appeals are fallacies only when they are used to hinder or confuse thinking.

Bandwagon Argument

A band wagon argument plays on a person's desire to be accepted, popular, or valued rather than appealing to logically relevant reasons or evidence.

Example #1: Everyone at school is skipping basket weaving class. You should skip basket weaving class too.

Example #2: I can't believe you're going to the library to study Friday night. You don't want everyone thinking you're a nerd, do you?

Example #3: Everyone I've talked to says the movie is great. The movie is probably great, so I will go to the theater.

Examples one and two are fallacies. Example three is not a fallacy because the premise is relevant to the conclusion.

Straw Man Fallacy

A presenter commits a straw man fallacy when he or she distorts an opponents argument or claim to make it easier to refute.

Senator Sam argues that violent pornography should be outlawed. Obviously the senator favors complete governmental censorship of books, magazines, and films. I'm shocked that such a view should be expressed on the floor of the U.S. senate. It runs counter to everything this great nation stands for. No senator should listen seriously to such a proposal.

Red Herring/Smoke Screen

A red herring fallacy is committed when a presenter attempts to sidetrack his or her audience by raising an irrelevant issue then claims that the original issue has been effectively settled by the diversion.

Politician: Critics have accused my administration of doing too little to save the family farm. These critics forget that I grew up on a farm. I know what it is like to get up at the crack of dawn to milk the cows. I know what it is like to work in the field all day in the blazing sun or biting cold. Family farms are what made this country great, and those who criticize my farm policies simply don't know what they are talking about.

Ambiguity or Equivocation

The fallacy of ambiguity or equivocation is committed when a key word is used with two or more distinct senses.

Any law can be repealed by the proper legal authority. The law of gravity is a law. Therefore, it can be repealed by the proper legal authority.

Begging the Question

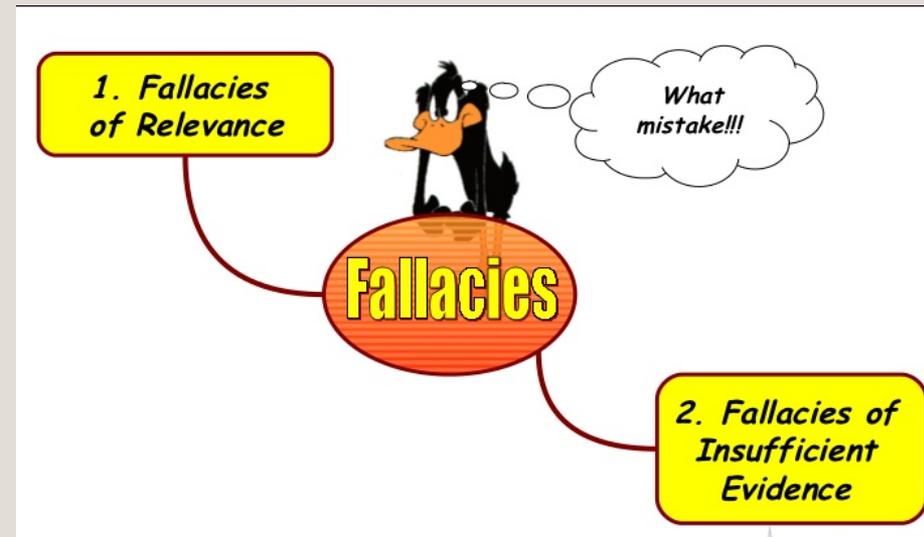
The fallacy of begging the question is committed when a presenter states or assumes as a premise the conclusion he or she is trying to prove.

Capital punishment is morally wrong because it is not ethically permissible to put someone to death.

Bungee jumping is dangerous because it is unsafe.

Fallacies of Insufficient Evidence

- Inappropriate appeal to authority
- Appeal to ignorance
- False dilemma or false alternatives
- Loaded question
- Questionable cause
- Hasty generalization
- Slippery slope
- Weak analogy
- Inconsistency



Inappropriate Appeal to Authority

The fallacy of inappropriate appeal to authority is committed when a presenter cites a witness or authority who is unreliable based on good reasons to think so.

When is it reasonable to think a witness or authority unreliable?

1. When the source is not a genuine authority on the subject at issue.
2. When the source is biased or has some other reason to lie or mislead.
3. When the accuracy of the source's observations are questionable.

4. When the source cited (e.g. a media source, a reference work, or an Internet source) is known to be generally unreliable.
5. When the source has not been cited correctly or the cited claim has been taken out of context.
6. When the source's claim conflicts with expert opinion.
7. When the issue is not one that can be settled by expert opinion.
8. When the claim is highly improbable on its face.

Appeal to Ignorance

An appeal to ignorance occurs when a presenter asserts a claim that must be true because no one has proven it false; or that a claim must be false because no one has proven it true.

When we lack evidence, it is best to suspend judgment – to admit that we just don't know.

There must be intelligent life on other planets. No one has proven that there isn't.

There must not be intelligent life on other planets. No one has proven that there is.

False Dilemma, False Alternatives, or Either/Or Fallacy

The fallacy of false dilemma is committed when a presenter poses a false either/or choice.

Either we elect a Republican as president or crime rates will skyrocket. Obviously, we do not want an increase in crime. Therefore we should elect a Republican president.

If we don't elect a Democrat as president, then the economy will go down the tubes. Obviously, we don't want the economy to go down the tubes. So, we should elect a Democrat.

Loaded Question

A loaded question contains unfair or questionable assumptions.

Are all loaded questions fallacies?

No. loaded questions are fallacies only if they are used unfairly in an argumentative context.

Loaded questions combine two or more questions into one.

Have you stopped cheating on exams?

Honorable Flora McDonald speaking in the Canadian House of Commons: Madam Speaker, my question is also directed to the Minister of Finance. I would like to say to him that his policies are directly responsible for the fact that 1,185 more Canadians are without jobs every single day, 1,185 more Canadians with families to feed and mortgages to pay. How long is the minister prepared to condemn 1,200 more Canadians everyday to job loss and insecurity because he is too stubborn and too uncaring to change his policies.

Questionable Cause

The fallacy of questionable cause is committed when a presenter claims, without sufficient evidence, that one thing has caused another.

There are three variations of the questionable cause fallacy.

1. The *post hoc* fallacy from the Latin *post hoc ergo propter hoc* (after this therefore because of this).
2. Mere correlation fallacy occurs when a presenter observes A and B regularly occur together and concludes A must cause B or B must cause A.
3. Oversimplification fallacy occurs when a presenter assumes, without adequate evidence, that A is the sole cause of B when in fact, A is one of several causes of B.

Hasty Generalization

A generalization is a statement that asserts that all or most things of a certain kind have a certain quality or characteristic.

A hasty generalization occurs when a presenter draws a general conclusion from a sample that is too small or biased.

Small business owner: In the last three month I've hired three local men, and all of them turned out to be lazy. I guess all local men are lazy.

Slippery Slope

A slippery slope fallacy occurs when a presenter claims without sufficient evidence that a seemingly harmless action, if taken, will result in an undesirable outcome.

Dr. Dogood proposed that we legalize physician-assisted suicide. No sensible person should listen to such a proposal. If we allow physician-assisted suicide, eventually there will be no respect for human life.

Weak Analogy

The fallacy of weak analogy occurs when a presenter compares two or more things that really are not compatible in relevant respects.

Lettuce is leafy and green, and tastes great in a salad. Poison ivy is leafy and green; therefore, it should taste great in a salad.

To evaluate analogies:

1. List similarities
2. List differences
3. Decide whether similarities or differences are important.

For Further Study

Moore, Brooke Noel and Richard Parker. *Critical Thinking*, 9th ed. McGraw Hill, 2009.

Paul, Richard and Linda Elder. *The Thinker's Guide to Fallacies*. Foundation for Critical Thinking, 2012.

<http://www.fallacyfiles.org/index.html>

Questions?

Email questions or comments to your instructor.