

Logic and Fallacies

What is Fallacy?

- Fallacies are defects that weaken arguments.
- Fallacious arguments are very, very common and can be quite persuasive, at least to the casual reader or listener. You can find dozens of examples of fallacious reasoning in newspapers and advertisements.
- It is sometimes hard to evaluate whether an argument is fallacious. An argument might be sound or unsound, valid or invalid.
- Read “Truth, Validity, and Soundness”

Hasty Generalization

- **Definition:** Making assumptions about a whole group or range of cases based on a sample that is inadequate (usually because it is atypical or just too small).
 - Stereotypes about people ("frat boys are drunkards," "grad students are nerdy," etc.) are a common example of the principle underlying hasty generalization.
- **Example:** "My roommate said her philosophy class was hard, and the one I'm in is hard, too. All philosophy classes must be hard!"
 - Two people's experiences are, in this case, not enough on which to base a conclusion.

Missing the Point

- **Definition:** The premises of an argument do support a particular conclusion--but not the conclusion that the arguer actually draws.
- **Example:** "The seriousness of a punishment should match the seriousness of the crime. Right now, the punishment for drunk driving may simply be a fine. But drunk driving is a very serious crime that can kill innocent people. So the death penalty should be the punishment for drunk driving."
 - The argument actually supports several conclusions-- "The punishment for drunk driving should be very serious," in particular--but it doesn't support the claim that the death penalty, specifically, is warranted.

Missing the Point (Examples)

- There are many angry riots occurring in the streets.
- Something must be done to protect the safety of innocent bystanders.
- Therefore we must start arresting people that gather in groups larger than five.

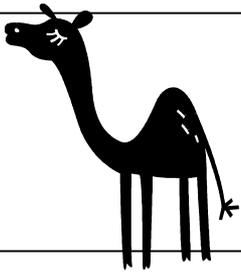
- We are quickly diminishing the supplies of fossil fuels in the earth.
- We must do our part to conserve resources.
- Therefore we must abandon cars and electricity and adopt the ways of the Amish.

- The forest fire is burning faster than we can contain it.
- Fighting forest fires is a drain on the state's resources.
- Therefore we should just let the whole forest burn instead of trying to contain the fire.

Post hoc (false cause)

This fallacy gets its name from the Latin phrase "*post hoc, ergo propter hoc*," which translates as "after this, therefore because of this."

- **Definition:** Assuming that because B comes after A, A caused B.
 - Of course, sometimes one event really does cause another one that comes later--for example, if I register for a class, and my name later appears on the roll, it's true that the first event caused the one that came later. But sometimes two events that seem related in time aren't really related as cause and event. That is, correlation isn't the same thing as causation.
- **Example:** "President Jones raised taxes, and then the rate of violent crime went up. Jones is responsible for the rise in crime."
 - The increase in taxes might or might not be one factor in the rising crime rates, but the argument hasn't shown us that one caused the other.



Slippery Slope

Also known as
“the Camel’s
Nose”

- **Definition:** The arguer claims that a sort of chain reaction, usually ending in some dire consequence, will take place, but there's really not enough evidence for that assumption.
 - The arguer asserts that if we take even one step onto the "slippery slope," we will end up sliding all the way to the bottom; he or she assumes we can't stop halfway down the hill.
- **Example:** "Animal experimentation reduces our respect for life. If we don't respect life, we are likely to be more and more tolerant of violent acts like war and murder. Soon our society will become a battlefield in which everyone constantly fears for their lives. It will be the end of civilization. To prevent this terrible consequence, we should make animal experimentation illegal right now."
 - Since animal experimentation has been legal for some time and civilization has not yet ended, it seems particularly clear that this chain of events won't necessarily take place.

Direct TV ads

Weak Analogy

- **Definition:** Many arguments rely on an analogy between two or more objects, ideas, or situations. If the two things that are being compared aren't really alike in the relevant respects, the analogy is a weak one, and the argument that relies on it commits the fallacy of weak analogy.
- **Example:** "Guns are like hammers--they're both tools with metal parts that could be used to kill someone. And yet it would be ridiculous to restrict the purchase of hammers--so restrictions on purchasing guns are equally ridiculous."
 - While guns and hammers do share certain features, these features (having metal parts, being tools, and being potentially useful for violence) are not the ones at stake in deciding whether to restrict guns. Rather, we restrict guns because they can easily be used to kill large numbers of people at a distance. This is a feature hammers do not share--it'd be hard to kill a crowd with a hammer. Thus, the analogy is weak, and so is the argument based on it.
- If you think about it, you can make an analogy of some kind between almost any two things in the world: "This dry sponge is like a mud puddle because they both get bigger when it rains and they're both kind of murky." So the mere fact that you draw an analogy between two things doesn't prove much, by itself.

Appeal to Authority

- **Definition:** Often we add strength to our arguments by referring to respected sources or authorities and explaining their positions on the issues we're discussing.
 - If, however, we try to get readers to agree with us simply by impressing them with a famous name or by appealing to a supposed authority who really isn't much of an expert, we commit the fallacy of appeal to authority.
- **Example:** "We should abolish the death penalty. Many respected people, such as actor Chris Pratt, have publicly stated their opposition to it."
 - While Chris Pratt may be an authority on matters having to do with acting, there's no particular reason why anyone should be moved by his political opinions--he is probably no more of an authority on the death penalty than the person writing the paper.

Appeal to Pity

- **Definition:** The appeal to pity takes place when an arguer tries to get people to accept a conclusion by making them feel sorry for someone.
- **Example:** "I know the exam is graded based on performance, but you should give me an A. My cat has been sick, my car broke down, and I've had a cold, so it was really hard for me to study!"
 - The conclusion here is "You should give me an A." But the criteria for getting an A have to do with learning and applying the material from the course; the principle the arguer wants us to accept (people who have a hard week deserve A's) is clearly unacceptable.
- **Example:** "It's wrong to tax corporations--think of all the money they give to charity, and of the costs they already pay to run their businesses!"

Appeal to Ignorance

- **Definition:** In the appeal to ignorance, the arguer basically says, "Look, there's no conclusive evidence on the issue at hand. Therefore, you should accept my conclusion on this issue."
- **Example:** "People have been trying for centuries to prove that God exists. But no one has yet been able to prove it. Therefore, God does not exist."

Here's an opposing argument that commits the same fallacy:

- "People have been trying for years to prove that God does not exist. But no one has yet been able to prove it. Therefore, God exists."
 - In each case, the arguer tries to use the lack of evidence as support for a positive claim about the truth of a conclusion. There is one situation in which doing this is not fallacious: If qualified researchers have used well-thought-out methods to search for something for a long time, they haven't found it, and it's the kind of thing people ought to be able to find, then the fact that they haven't found it constitutes some evidence that it doesn't exist.

Ad Hominem

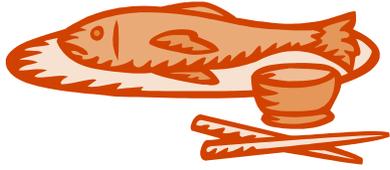
- **Definition:** In this fallacy, the arguer basically says, "Look, this guy is a jerk. Therefore, you shouldn't believe anything he says."
- **Example:** "Poet Allen Ginsburg has argued in favor of abolishing censorship of pornographic literature. But Ginsberg's arguments are nothing but trash. Ginsberg, you know, is a marijuana-smoking homosexual and a thoroughgoing advocate of the drug culture."
- **Example:** "William Buckley has argued in favor of legalizing drugs such as cocaine and heroin. But Buckley is just another one of those upper-crust intellectuals who is out of touch with real America. No sensible person should listen to his pseudo-solutions."



Straw Man

- **Definition:** One way of making our own arguments stronger is to anticipate and respond in advance to the arguments that an opponent might make. The arguer sets up a wimpy version of the opponent's position and tries to score point by knocking it down.
- **Example:** "Feminists want to ban all pornography and punish everyone who looks at it! But such harsh measures are surely inappropriate, so the feminists are wrong: porn and its readers should be left in peace."
 - The feminist argument is made weak by being overstated--in fact, most feminists do not propose an outright "ban" on porn or any punishment for those who merely look at it; often, they propose some restrictions on things like child porn, or propose to allow people who are hurt by porn to sue publishers and producers, not readers, for damages.

Example: "Mr. Goldberg has argued against prayer in the public schools.. Obviously, Mr. Goldberg advocates atheism. But atheism is what they used to have in the Soviet Union. Atheism leads to the suppression of all religions and the replacement of God by an omnipotent state. Is that what we want for this country? No way. Mr. Goldberg's argument is useless.



Red Herring

- **Definition:** Partway through an argument, the arguer goes off on a tangent, raising a side issue that distracts the audience from what's really at stake. Often, the arguer never returns to the original issue.
- **Example:** "Grading this exam on a curve would be the most fair thing to do. After all, classes go more smoothly when the students and the professor are getting along well." Let's try our premise-conclusion outlining to see what's wrong with this argument:
 - Premise: Classes go more smoothly when the students and the professor are getting along well.
 - Conclusion: Grading this exam on a curve would be the most fair thing to do.
- When we lay it out this way, it's pretty obvious that the arguer went off on a tangent--the fact that something helps people get along doesn't necessarily make it more fair; fairness and justice sometimes require us to do things that cause conflict. But the audience may feel like the issue of teachers and students agreeing is important and be distracted from the fact that the arguer has not given any evidence as to why a curve would be fair.
- **Example:** "Margie says that Tasters Choice coffee tastes better than Folgers. Apparently she is ignoring the fact that Tasters Choice is made by Nestlé, and Nestlé is the company that manufactured that terrible baby formula for Third World countries. Thousands of babies died when the dry milk formula was mixed with contaminated water. Clearly Margie is wrong."

False Dichotomy

- **Definition:** In false dichotomy, the arguer sets up the situation so it looks like there are only two choices. The arguer then eliminates one of the choices, so it seems that we are left with only one option: the one the arguer wanted us to pick in the first place.
- **Example:** "Caldwell Hall is in bad shape. Either we tear it down and put up a new building, or we continue to risk students' safety. Obviously we shouldn't risk anyone's safety, so we must tear the building down."
 - The argument neglects to mention the possibility that we might repair the building or find some way to protect students from the risks in question--for example, if only a few rooms are in bad shape, perhaps we shouldn't hold classes in those rooms.



Begging the Question



- **Definition:** An argument that begs the question asks the reader to simply accept the conclusion without providing real evidence

- the argument either relies on a premise that says the same thing as the conclusion (which you might hear referred to as "being circular" or "circular reasoning"), or simply ignores an important (but questionable) assumption that the argument rests on.
- Sometimes people use the phrase "beg the question" as a sort of general criticism of arguments, to mean that an arguer hasn't given very good reasons for a conclusion, but that's not the meaning we're going to discuss here.

- **Examples:** "Active euthanasia is morally acceptable. It is a decent, ethical thing to help another human being escape suffering through death." Let's lay this out in premise-conclusion form:

- Premise: It is a decent, ethical thing to help another human being escape suffering through death.
- Conclusion: Active euthanasia is morally acceptable.

- If we "translate" the premise, we'll see that the arguer has really just said the same thing twice: "decent, ethical" means pretty much the same thing as "morally acceptable," and "help another human being escape suffering through death" means "active euthanasia." So the premise basically says, "active euthanasia is morally acceptable," just like the conclusion does! The arguer hasn't yet given us any real reasons *why* euthanasia is acceptable; instead, she has left us asking "well, really, why do you think active euthanasia is acceptable?" Her argument "begs" (that is, evades) the real question.



Complex Question



- **Definition:** A single question that includes two separate but related questions, forcing the opponent to answer both questions at once.
- **Examples:** “Have you stopped cheating on your exams?”

“Where did you hide the cookies you stole?”

An answer of yes or no/nowhere to either will incriminate the responder.

= Equivocation =

- **Definition:** Equivocation is sliding between two or more different meanings of a single word or phrase that is important to the argument.
- **Example:** "Giving money to charity is the right thing to do. So charities have a right to our money."
 - The equivocation here is on the word "right": "right" can mean both something that is correct or good (as in "I got the right answers on the test") and something to which someone has a claim (as in "everyone has a right to life").
 - Sometimes an arguer will deliberately, sneakily equivocate, often on words like "freedom," "justice," "rights," and so forth; other times, the equivocation is a mistake or misunderstanding. Either way, it's important that you use the main terms of your argument consistently.

Composition

- **Definition:** In composition, an attribute of the parts is erroneously transferred to the whole.
- **Example:** “Maria likes anchovies. She also likes chocolate ice cream. Therefore, it is certain that she would like a chocolate sundae topped with anchovies.”
- **Example:** “Each atom in this marker is invisible. Therefore, the marker is invisible.”

Division

- **Definition:** In division, an attribute of the whole is erroneously transferred to the parts.
- **Example:** “Salt is a nonpoisonous compound. Therefore, its component elements are nonpoisonous.”
- **Example:** “The jigsaw puzzle, when assembled, is circular in shape. Therefore, every piece must be circular.”

Can you name this Fallacy?

- 1) It is ridiculous to have spent thousands of dollars to rescue those two whales trapped in the Arctic ice. Why look at all the people trapped in jobs they don't like!

RED HERRING

Can you name this Fallacy?

2) Plagiarism is deceitful because it is dishonest.

BEGGING THE QUESTION

Can you name this Fallacy?

- 3) Water fluoridation affects the brain.
Citywide, student's test scores began to drop five months after fluoridation began.

POST HOC (false cause)

Can you name this Fallacy?

4) I know three redheads who have terrible tempers, and since Annabel has red hair, I'll bet she has a terrible temper too.

HASTY GENERALIZATION

Can you name this Fallacy?

- 5) Compton is a dangerous part of Los Angeles where a large number of violent crimes happen. Therefore, every resident of Compton is a criminal.

DIVISION

Can you name this Fallacy?

6) Why should we put people on trial when we know they are guilty?

BEGGING THE QUESTION

Can you name this Fallacy?

7) You support capital punishment just because you want an “eye for an eye,” but I have several good reasons to believe that capital punishment is fundamentally wrong...

STRAW MAN

Can you name this Fallacy?

8) The meteorologist predicted the wrong amount of rain for May. Obviously the meteorologist is unreliable.

HASTY GENERALIZATION

Can you name this Fallacy?

9) You know Jillian Michaels' exercise videos must be worth the money. Look at the great shape she's in.

POST HOC (false cause)

Can you name this Fallacy?

10) We have to stop the tuition increase!
The next thing you know, they'll be
charging \$40,000 a semester!

SLIPPERY SLOPE

Can you name this Fallacy?

11) The book *Investing for Dummies* really helped me understand my finances better. The book *Chess for Dummies* was written by the same author, was published by the same press, and costs about the same amount, so it would probably help me understand my finances as well.

WEAK ANALOGY

Can you name this Fallacy?

12) Look, you are going to have to make up your mind. Either you decide that you can afford this stereo, or you decide you are going to do without music for a while.

FALSE DICHOTOMY

Can you name this Fallacy?

13) I'm positive that my work will meet your requirements. I really need the job since my grandmother is sick.

APPEAL TO PITY

Can you name this Fallacy?

14) Crimes of theft and robbery have been increasing at an alarming rate lately. The conclusion is obvious, we must reinstate the death penalty immediately.

MISSING THE POINT

Can you name this Fallacy?

15) I'm not a doctor, but I play one on the TV series "New Amsterdam." You can take it from me that when you need a fast acting, effective and safe pain killer there is nothing better than MorphiDope 2000. That is my considered medical opinion.

APPEAL TO AUTHORITY