Common Logical Fallacies

Flawed Arguments
Logical Fallacies...

• Flaws in an argument
• Often subtle
• Learning to recognize these will:
  – Strengthen your own arguments
  – Help you critique other’s arguments
Hasty Generalization

• A generalization based on insufficient or unrepresented evidence

  – Deaths from drug overdoses in Metropolis have doubled over the last three years. Therefore, more Americans than ever are dying from drug abuse.

  https://www.youtube.com/watch?v=Ukhc2FQi48Q
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.
Non Sequitur (Does Not Follow)

• A conclusion that does not follow logically from preceding statements or that is based on irrelevant data.

  – Mary loves children, so she will make an excellent school teacher.
Non Sequitur
in advertising

https://www.youtube.com/watch?v=TnzFRV1Lwlo

https://www.youtube.com/watch?v=erh2ngRZxs0

https://www.youtube.com/watch?v=mGs4CjeJiJQ
False Analogy

• The assumption that because two things are alike in some respects, they are alike in others.

  – If we put humans on the moon, we should be able to find a cure for the common cold.
False Analogy
False 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: "My paper is like a mud puddle because they both get bigger when it rains (I work more when I'm stuck inside) 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.
“Either... or” Fallacy (False Dichotomy)

• The suggestion that only two alternatives exist when in fact there are more.

  – Either learn how to program a computer, or you won’t be able to get a decent job after college.
False Dichotomy

There are some things money can't buy. For everything else, there's MASTERCARD.
Either Or/ 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."
Two Choices
Your Pick

Either allow Prayer in schools.

OR

False Dilemma

If not you are an atheist.

Support my daughters fundraiser
or
Disappoint her.

Either A or B is true. You have no more options (Or thats what you think) By picking one choice you reject the other.
False Cause (*Post Hoc*, Coincidence vs. Causality)

• The assumption that because one event follows another, the first is the cause of the second.

  – Since Governor Smith took office, unemployment for minorities in the state has decreased by seven percent. Governor Smith should be applauded for reducing unemployment among minorities.
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.

• Examples: "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.
Post Hoc Ergo Propter Hoc

https://www.youtube.com/watch?v=vRJUvFG8gbE

https://www.youtube.com/watch?v=s2WM0W1PPU0
Circular Reasoning/ Begging the Question (Unsupported Assertion)

• An argument in which the writer, instead of applying evidence simply restates the point in other language.

  – Students should not be allowed to park in lots now reserved for faculty because those lots should be for faculty only.
Circular Reasoning

https://www.youtube.com/watch?v=v_CgPsGY5Mw

https://www.youtube.com/watch?v=8CVbku6nxhU

https://www.youtube.com/watch?v=c_fOywk7DdU
**Definition:** A complicated fallacy, 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.
Bandwagon Appeal (Ad Populum)

• A claim that an idea should be accepted because a large number of people favor it or believe it to be true.

  – Everyone knows that smoking marijuana is physically addictive and psychologically harmful.

  https://www.youtube.com/watch?v=zPBs5_ZYTrg

  http://www.welovead.com/en/works/details/c5dzirrw
Argument to the Person (*Ad Hominem*)

- An attack on the person proposing an argument rather than on the argument itself.

  – Senator Jones was a conscientious objector during the Vietnam War, so his proposal to limit military spending has no merit.

https://www.youtube.com/watch?v=FD50OTR3arY

https://www.youtube.com/watch?v=24rM3--llv8
Red Herring

• An argument that focuses on an irrelevant issue to detract attention from the real issue.

  – Reporters are out to get the president, so it’s no wonder we are hearing rumors about these scandals.

https://www.youtube.com/watch?v=vpmFd25tRqo
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.
Force and Fear (Ad Baculum)

• The *ad baculum* fallacy is committed whenever the proponent of an argument attempts to persuade the audience to accept the conclusion... by predicting (or causing) unpleasant consequences if it is not accepted.

  – If you don’t eat your vegetables, you’ll stop growing.

  https://www.youtube.com/watch?v=VYyvBg9OHRw
  https://www.youtube.com/watch?v=Op5uAxIklko
Force/Fear/Slippery Slope/
Ad Baculum

• **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."
Appeal to Celebrity/False Authority (Ad Verecundiam)

• The *ad verecundiam* fallacy consists of an appeal to irrelevant authority, that is, an ‘authority’ who is not an authority in the field of question (or at least one we have no reason to believe to be such an authority).

  – Oprah says that she won’t eat beef, therefore you shouldn’t eat beef.
Appeal to Authority (ETHOS)

- **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 Guy Handsome, have publicly stated their opposition to it."
  - While Guy Handsome 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."
in advertising

https://www.youtube.com/watch?v=P84Lm_4OWYQ

https://www.youtube.com/watch?v=-qivqY8-HIU
Pity (Ad Misericordiam)

• *Ad Misericordiam* is an appeal to accept the truth of a conclusion out of pity for the arguer or some third party. Either the arguer (or someone else) is already an object of pity, or they will become one if the conclusion is not accepted.

  – If I don’t get at least a B in this course my GPA will drop below 2.0. If that happens I’ll lose my scholarship and have to quit school, so I ought to get a B in this course.
Appeal to Pity (PATHOS)

• **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 Pity (PATHOS)

https://www.youtube.com/watch?v=9gspElv1yvc
Pathos

Homeless animals need your help today...

Donate Today!
Non-Disproof

• One sometimes encounters arguments that some claim should be accepted because they have never been disproved. The move from ‘not disproved’ to ‘proved’ is invalid.

  – No one has ever shown that it is impossible that the stars rule our lives; therefore, astrology is true.
Undistributed Middle

- An error in deductive reasoning in which the parts of a premise may, or may not, overlap. The middle term is undistributed in that all instances of a conclusion are also instances of the premise.
- Valid argument: All mammals have hair. All whales are mammals. All whales have hair.
  - The middle term is distributed: Whales fits into the categories of “mammals” and “having hair.”
- Undistributed Middle: All whales have hair. All humans have hair. All whales are human.
  - Undistributed: The middle term (Human) does not fit into both categories (Whales and Hair).
Appeal to celebrity (Ad Verecundiam) & Hasty Generalization
It's time to join in

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Bandwagon
Bandwagon (Ad populum)
Non Sequitur
Circular reasoning

THERE’S NO GOVERNMENT LIKE NO GOVERNMENT

http://www.cafepress.com
Either/Or (False Dichotomy)
Fallacies Covered:

• Hasty Generalization
• Non Sequitur (Does Not Follow)
• False Analogy
• “Either… or” Fallacy
• False Cause (*Post Hoc*, Coincidence vs. Causality)
• Circular Reasoning/ Begging the Question (Unsupported Assertion)
• Bandwagon Appeal (*Ad Populum*)
• Argument to the Person (*Ad Hominem*)
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• Force and Fear (*Ad Baculum*)
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Credits


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