

## Lecture 7: Logical Fallacies

The **Suggested Reading** for this lecture is Douglas N. Walton's *Informal Logic: A Handbook for Critical Argumentation*.

In the previous lecture, we examined how logical arguments can be made up of syllogisms, and we noted that there are certain versions of *If*  $\rightarrow$  *Then* statements that are not necessarily true (they are actually often false). For example, the inverse (putting NOT) on either side and the converse (switching the order) are not necessarily true. We also learned that the contrapositive, switching the order *and* putting NOT on each side, *is* always true. We also briefly noted that this kind of reasoning only works with certain kinds of propositions, those that are categorical—the contrapositive is not always true when it is applied to noncategorical statements like “some cows are white.”

### When Logic Fails

In this lecture, which might be my favorite one in the entire course, I want to talk about the different ways that logical argument can go wrong. There is a long, long tradition of this kind of analysis, which is why nearly every kind of logical flaw you can think of has a name, an explanation, and a remedy. Thus most of this lecture will be spent examining different logical fallacies. But you should be aware that we have only scratched the surface here: There are many, many more fallacies, and you can draw very, very fine distinctions between the various sorts. Almost all of these fallacies depend, in one way or another, on the kinds of problems we have noted that can arise in logic. Many of the fallacies have great names, and they use Latin, and they are devastating argumentative weapons because nowadays not everyone is well educated in rhetoric. So if you master some of these concepts and apply analysis to note the flaws in arguments, it will make you a much more effective writer and rhetorician.

I am unaware of any definitive list of which logical fallacies are the most common, but here, in the order that I think is most helpful, is a discussion of the most common fallacies and how to fix them.

**Asserting the Consequent.** This is one of the hardest fallacies to avoid. It occurs when a writer or speaker assumes that the *converse* of a true statement is automatically true. Remember that the *converse* of a true statement is the statement with the order of premises switched.

Statement: If it is a fish, then it lives under water.

Converse: If it lives under water, then it is a fish.

Not true, as seals, manatees, and squid suggest.

If the economy is growing, then people vote for the incumbent.

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This is (probably) a true statement. But people like to turn this around to the following:

If you vote for the incumbent, then the economy will grow.

That is not logically proven. Another example might be the following:

If you play by the rules, you will be successful.

Converse: Person x is successful, therefore he must have played by the rules.

Tony Soprano and Richard the Third would enjoy a good laugh at this.

*Denying the Antecedent.* This fallacy is closely related to asserting the consequent. Here, instead of incorrectly assuming that the *converse* is true, people incorrectly assume that the *inverse* is true. Remember that the inverse takes a true statement and puts NOT on both sides:

Statement: If it is a fish, then it lives under water.

Inverse: If it is NOT a fish, then it does NOT live under water.

Also obviously untrue, as Shamu the killer whale proves.

An example of denying the antecedent in regular rhetoric would be something like the following:

If you play by the rules, you will be successful.

The fallacy would be in adding NOT to both sides:

If you don't play by the rules, you will not be successful.

Tell that to any number of thieves and charlatans.

*Post Hoc Ergo Propter Hoc.* This is a fallacy somewhat related to asserting the consequent and denying the antecedent. This fallacy, which is usually just abbreviated as "the post hoc fallacy," is created when a writer or speaker assumes that because something came after something else, the first thing caused the second. Politicians *love* the post hoc fallacy, because it is so difficult to separate out causes from coincidences in the real world.

Two years ago you elected me, and since that time the unemployment rate has dropped by 5 percent.

Maybe the politician had something to do with it, but the statement above does not prove that. A huge amount of the effort put into science is devoted to figuring out whether something *caused* the problem or just occurred afterwards. Noting post hoc fallacies can be a full-time job.

*Petitio Principii (Begging the Question).* This is one of my favorite fallacies. It means "begging the question," and it is wildly abused by newspaper columnists and others who do not know formal logic but do know that "begging the question" is not a good thing.

Begging the question does *not* mean "raising a new question," so saying that "Senator Smith's acquittal for perjury begs the question of whether he should have been indicted in the first place" is incorrect usage. Rather, *petitio principii* means that you have asked the other side to concede the main point to be argued. If we are arguing about what to eat for dinner, you say, "just to speed things up, can't you at least agree that we won't eat seafood?" so that

we can move on. But if I *wanted* to eat seafood, asking me to concede, for the sake of argument, that we won't eat seafood, is begging the question: asking for me to give in preemptively.

But begging the question can be more subtle as well. A good indicator of this fallacy is the use of an adjective or adverb to perform all the logical work in the sentence. When politicians campaign on the platform of eliminating "wasteful spending," they are in fact begging the question. Everyone is against *wasteful* spending; there is no need to have an argument about it. The real question (which has been begged here) is which spending is wasteful and which is not. Therefore the word "wasteful" begs the question by trying to get you to agree that whatever spending the politician is against, you're against too. You'll see that this fallacy is related to the enthymeme: It assumes that you share the enthymeme with the speaker even when you don't.

Again, the trick to catching this fallacy is to notice when the adjective or the adverb is doing all the work. "Wasteful" spending; "unnecessary" military force; "extreme" inequality; "tasteless" vulgarity; in every case the real argument is how to classify things into the different categories (wasteful versus important, necessary versus unnecessary, extreme versus unavoidable, tasteless versus challenging). So look for adjectives and adverbs in your opponents' speeches and then, when you catch this error, say that "unfortunately, you're guilty of the logical fallacy of *petitio principii*."

*Attacking the Messenger: Argumentum ad Hominem.* Back in lecture two we discussed Aristotle's various categories of rhetoric, which included forensic (finding out what has already happened), deliberative (deciding what we should do), and epideictic (praising or blaming). The ad hominem fallacy occurs when you take techniques and approaches from epideictic rhetoric and try to apply them to deliberative or forensic rhetoric.

Ad hominem means "to the man," and it is an attack on the messenger or speaker rather than on the argument. Sometimes it can be brutally effective, and this is why it is used so often. But the danger of ad hominem is that the fallacy risks alienating the audience and turning them against the speaker.

But the real fallacy of ad hominem is when an attack on the person is substituted for a substantive critique of the person's ideas. For example, "Senator Smith's plan for environmental protection should be rejected because Smith is a drunk." Smith may very well be a drunk, but that has nothing to say about the merits of his plan. Argumentum ad hominem is probably most commonly used today in attacks on people's intelligence: Candidate X is stupid; therefore his policies must be bad. Note that "candidate X is stupid, therefore we should not elect him" is a reasonable syllogism (with the enthymeme of "we should not elect stupid people"), but this says nothing about the policies the candidate is advocating.

A variant of ad hominem can be called, tongue in cheek, *argumentum ad Hitlerum*: that is, a speaker finds some area where Hitler agreed with an idea that the speaker's opponent agrees with. This is then used to discredit an argument: "Hitler was a vegetarian, so therefore vegetarianism is wrong" is an argumentum ad Hitlerum. The Internet version of this is called Godwin's Law, which states that all arguments eventually devolve into people flinging

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insults about Hitler or Nazis. The first side to do so has, according to Godwin, automatically lost the argument.

Ad hominem rhetoric can be fun, and it can make you feel better about whatever you are angry about. But it really is only *effective* at riling up the troops who are already on your side; it is not going to convince anyone to agree with you. This may be useful in electoral politics, but in the kinds of situations where most of us are likely to be using rhetoric—office politics, speaking at a meeting, trying to convince people to agree with us—ad hominem is a terrible idea and is likely to backfire in a big way.

### More Logical Fallacies

*Tu Quoque.* Related to the ad hominem fallacy is the tu quoque fallacy, or, as we used to use it in New Jersey when I was growing up, the “so’s your mom” fallacy.

An example would be “famous actor X says that population control is a good idea, but he has eleven children.” Famous actor X may be a hypocrite, but that does not address the merits of the idea of population control, whatever they may be. The tu quoque fallacy is probably the most common in all of political discourse.

It is worth noting that on the one hand, this is a very effective way of criticizing someone, because very few people (and even few politicians) manage to live up to every ideal they preach. The saying is that hypocrisy is the tribute vice pays to virtue, and it is worth thinking of this when considering whether or not to engage in the tu quoque fallacy: It gives you short-term cover, but in the long run you are not likely to convince anyone.

*Red Herring (Ignoratio Elenchi—Irrelevant Thesis).* Because tu quoque focuses on the hypocrisy of the speaker, it distracts the hearer or reader from the real issues. That is the same general idea of the red herring, which is an attempt to change the subject from one in which the speaker is losing to one in which he is likely to win.

For example, when a company is being criticized for dumping pollutants into the environment and a spokesman brings up the fact that the company gave a lot of money to charity that year, you have a red herring situation.

*Appeal to Popularity (Ad Populum).* One of advertising’s favorite fallacies, this appeal to the herd instinct (it is also called “bandwagon”) boils down to the idea that since everybody is doing it, it must be good.

*Hasty Generalization.* The hasty generalization is a very, very common mistake of newspaper columnists, particularly those who are responsible for spotting trends. Using too little data, the user of the hasty generalization predicts a significant trend.

In political terms, this is used every time a politician wins a primary or gets favorable (or unfavorable) results from a poll: It always is taken to show what will happen in the next election. “Special elections” are particularly subject to hasty generalization fallacies, since they allow writers to speculate (and to fulfill their own wishes) about what will next happen.

*Sweeping Generalization (Dicto Simpliciter)*. This fallacy, which is akin to the hasty generalization, is the bane of students everywhere.

It occurs when a writer or speaker makes a categorical claim about something that cannot be claimed categorically: "Since the beginning of time, all people have enjoyed tipping over cows." All you have to do is find one counterexample and the entire argument fails. The key to avoiding the sweeping generalization is to be very clear whether or not your statements can be defended if they are categorical. If not, you need to use qualifiers like "many" and "most."

*Appeal to Ignorance (Argumentum ad Ignorantiam)*. This fallacy is more common in verbal argument than in formal discourse because, in general, it is a sign of desperation that makes the user appear less intelligent.

"No one can prove that lima beans don't cause cancer" is an appeal to ignorance.

This is a true statement, but totally meaningless. There are many things that no one has bothered to try to link to cancer, so that absence of proof is not proof of absence.

*Plurium Interrogationum (Too Many Questions)*. When a speaker asks a very large number of questions and then only allows for a short answer, he has committed the fallacy of plurium interrogationum.

It is a good trick to use when you have the other person in some kind of a defensive position (for instance, when you are a lawyer cross-examining a witness or, more commonly, a senator or congressperson badgering someone who is testifying). Plurium interrogationum can make the witness look bad, particularly if he or she gets rattled, but it is a logical fallacy and deserves to be recognized as a dirty trick (and usually the sign of a losing argument).

There are many additional fallacies, and it is worth learning them and their remedies, not only to improve your analytical abilities, but also to use in rhetorical combat with others. Avoiding fallacies is a step on the road toward rhetorical success, but it is not enough.

## FOR GREATER UNDERSTANDING



### Questions

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1. What is meant by “asserting the consequent”?
2. Why is *ad hominem* rhetoric a bad idea?

### Suggested Reading

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Walton, Douglas N. *Informal Logic: A Handbook for Critical Argumentation*.  
Cambridge: Cambridge University Press, 1989.