How to Argue
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17 January 2001

Everyone knows that you should be able to argue well. Anyone who doesn't is an ignorant stooge and will get what's coming to them. The philosopher Aristotle, one of the smartest people ever, said that logic was the highest form of thinking. All of the problems in the world, from poverty to war, are the result of a lack of logic. If only we would follow things to their logical conclusion, the world would be a better place.

The previous paragraph is full of arguments, and they're all flawed. Far too often, we are confronted with slippery shysters who use the power of words to deceive us. Sometimes we are our own tricksters. Fortunately, philosophers who study logic have identified common fallacies, or logically flawed statements. By understanding them, you will be able to spot bad arguments and perhaps stop making them yourself. In addition, they all have cool Latin names that you can casually drop at cocktail parties. Nothing proves a quality education like a withering comment delivered in a dead language!

Are You Arguing?
One of the surprising things about looking at arguments is how often people speak without actually making a point! Conditional statements like these are very common, but an argument has to be able to be resolved as true or false. For example, "I'm your boss, so get back to work!" is not actually an argument, but a command with an explanation (you are excused if you were persuaded, though!)

What is Logic?
Logic is "the science that deals with the principles and criteria of validity of inference and demonstration", that is how to determine if something is true or not. The most common type of logical argument is the deductive argument, one that proves its conclusions completely through logical statements, for example: "Because a son is the male child of his parents. Since I am the male child of my parents, therefore I am a son."

All logical arguments are composed of propositions – a statement which is either true or false. If a statement is only sometimes true or false, it probably needs to be defined better. The first propositions in a logical statement are premises. Premises are basic statements that a logical argument is built on and often include words like "because" or "since". These are what the argument assumes to be true, and need to be stated at the beginning. Inferences are intermediate propositions building on premises, showing the logical steps. They often have words such as "therefore" or "this implies". The conclusion is the final inference in argument, and can be the premise to another argument.

Causality

Causality –the relationship between a cause and its effects– is also very important. Let's say we are trying to argue that there is something wrong with the food we ate. If we say: "We got sick because the food we ate was bad." Even though we are using the form "A because B" we are actually explaining why we are sick, using the bad food as evidence, not saying that the food is bad. That would be: "The food must have been bad, because we got sick." This simple confusion can make things appear related, or misidentify the true cause.

Implication
Just because an argument is logically valid, doesn't mean that it is true. Euclidean geometry, which we all learned in grade school, is entirely valid as an idea, but Einstein's relativity theory has shown that it is not true. Keep in mind also that the argument is only as good as the initial statements. If one starts with the proposition "All men are dogs", even good logic will inevitably result in a canine result.

Common Fallacies
Fallacies are logical flaws in arguments or ways of distracting the listener. They are surprisingly common, occurring constantly in everyday speech. Please feel free to let most go by, we are a species that has done quite well despite our imprecision, and it gets really annoying! However, try to understand how people convince themselves of flawed ideas, and don't be afraid to stand up for what you believe in.

Argumentum ad hominem –the "argument directed at the man"
By focusing on the listener, this focuses the conversation away from the point. Statements like "No intelligent person would disagree with me." Or "You're not a vegetarian, you wear leather shoes." Insulting the person or pointing out inconsistencies in their own beliefs never proves a point, though it often stops someone from disagreeing.

Argumentum ad verecundium – the "'argument to awe"
This argument tries to get the listener to agree by citing a famous authority. This is not always wrong, but it is important to make sure the person is expert on the subject. Einstein's views on God are debatable, but his views on relativity are probably quite dependable.

Bifurcation -the "Black and White Fallacy"
This is the assertion that there are only two answers to a question, when others may exist. For example, the question "Does smoking cause cancer or not?" would make it out that there are only two options, when in fact, smoking causes cancer in approximately a third of smokers and is greatly effected by other factors.

Argumentum ad ignorantiam –the "argument from ignorance"

This argument shifts the burden of proof away from the speaker, suggestion that something is true because it hasn't been proved wrong, when it might not be possible to prove it at all. "Of course astrology is true, no one has ever proved it false." This is actually also an example of the following fallacy.

Argumentum ad nauseam –the argument of repetition
This argues that something is true because it is heard often. Like many fallacies, it is a misuse of a way we review the world. Many truths are commonly held, but being commonly held doesn't make something true.

Reductio ad absurdum -arguing the extreme case "The Straw man" fallacy
This argument is a misrepresentation of someone else's position so that it can be knocked down easily. It is a fallacy as it does not deal with the real position of the opponent.

Dicto simpliciter - Sweeping generalization
The sweeping generalization happens when someone applies qualities of a group to that of one specific element. This is the mistake of stereotyping, assuming that the average of a group is held by every ability.

Hasty generalization
This is the reverse fallacy, where one applies the qualities of one element to that of the entire group. "John the designer is a procrastinator, like all designers."

Fallacy of presupposition
This involves asking a question which slips an assertion in the beginning. If the respondent is not careful, they will find themselves accepting the flawed premise. The classic example of a loaded question is "Where did you hide the money you stole?"

The slippery slope argument
This very common argument states that if one event happens, others will inevitably follow, and it will be harder or impossible to fix later. This discounts the immediate effects of the decision and asserts that the decision is the cause of the future events. "If we legalize marijuana, everyone will then move onto harder drugs and we will have to legalize them, too."

In general
Being observant of peoples arguments, does not mean being argumentative. Give people the space to make their point and remember that we all think on our feet and sometimes say dumb things. Watch out for the word "obviously", it is a common way to stop the listener from thinking. Hopefully these simple guides will help you stay aware.

http://www.geology.utoledo.edu/department/faculty/djs/MISC/logic.htm

http://www.ibiblio.org/bgreek/archives/97-05/msg00455.html
Filters Against Folly
A mathematician reads the newspaper
Lying with statistics