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Good Argument

- ▶ Deductively Valid or Inductively Strong.
- ▶ Validity and truth-of-premises be evident
- ▶ Clearly Stated
- ▶ Avoid: Circularity, Ambiguity, and Emotional Language
- ▶ Be relevant to the issue at hand.

Circularity: Conclusion is in premise

- ▶ Petitio Principii
- ▶ Begging the Question
- ▶ The Soul is Immortal because it cannot die.

Ambiguity

- ▶ Changing the meaning of the term or phrase in argument
 - ▶ All rivers have banks
 - ▶ All banks have ATMs
 - ▶ ∴ All rivers have ATMs

Types of Ambiguity

- ▶ Equivocation (Words)
- ▶ Amphiboly (Grammar)
- ▶ Scope
- ▶ Accent

Amphiboly

- ▶ The anthropologists went to a remote area and took photographs of some native women, but they weren't developed.
- ▶ One morning I shot an elephant in my pajamas. How he got into my pajamas I'll never know.
- ▶ Save soap and waste paper

Scope

All that glitters is not gold. This rock glitters. Therefore, this rock is not gold.

Accent

You should not speak ill of our friends.

Appeal to Emotions

- ▶ Do not stir up feelings or use emotionally-driven language to make your point.
- ▶ Avoid the words with negative connotations in chapter 2.

Appeal to Emotions

You must have graded my exam incorrectly. I studied very hard for weeks specifically because I knew my career depended on getting a good grade. If you give me a failing grade I'm ruined!"

Appeals to emotion in fancy latin

- ▶ Appeal to Envy (AKA, Argumentum ad Invidiam)
- ▶ Appeal to Fear (AKA, Argumentum ad Metum)
- ▶ Appeal to Hatred (AKA, Argumentum ad Odium)
- ▶ Appeal to Pity (AKA, Argumentum ad Misericordiam)
- ▶ Appeal to Pride (AKA, Argumentum ad Superbiam)

Beside the point

- ▶ An argument should tackle the issue at hand.
- ▶ Press-conferences.
 - ▶ Athletes.
 - ▶ Right now, I just want to focus on helping my team win.
 - ▶ Yeah, but dude I just asked you if you felt like selling crack to the thirteen year-old while watching a dogfight was a violation of NCAA rules.

Red Herring

“The real disaster in the DUKE RAPE CASE was that we do not have national healthcare”

Red Herring

“I think there is great merit in making the requirements stricter for the graduate students. I recommend that you support it, too. After all, we are in a budget crisis and we do not want our salaries affected.”

“I have never seen it work where a government tells people what to eat and what to drink,” Kent said today, responding to an audience question at the Rotary Club of Atlanta. “If it worked, the Soviet Union would still be around.”

Beside the point: Straw Man

[N]ot one of 800 sexologists at a recent conference raised a hand when asked if they would trust a thin rubber sheath to protect them during intercourse with a known HIV infected person. . . . And yet they're perfectly willing to tell our kids that "safe sex" is within reach and that they can sleep around with impunity.

Ad populum. Appeal to the Crowd. Bandwagon.

- ▶ What the majority does or believes is not necessarily true or good.

Ad populum.

“My fellow Americans. . . there has been some talk that the government is overstepping its bounds by allowing police to enter peoples’ homes without the warrants traditionally required by the Constitution. However, these are dangerous times and dangerous times require appropriate actions. I have in my office thousands of letters from people who let me know, in no uncertain terms, that they heartily endorse the war against crime in these United States. Because of this overwhelming approval, it is evident that the police are doing the right thing.”

Ad populum

Everyone is selfish; everyone is doing what he believes will make himself happier. The recognition of that can take most of the sting out of accusations that you're being "selfish." Why should you feel guilty for seeking your own happiness when that's what everyone else is doing, too?

Opposition fallacy

- ▶ People you do not like can be right.
- ▶ Nazis thought physical education was good for you.

Genetic Fallacy.

- ▶ The origins of beliefs do not make them false.

Genetic Fallacy: Poisoning the Well

Three distinguished psychiatrists, Drs. Marmor, Bernard, and Ottenberg, have observed: "The reactions of some of these individuals [who criticize psychiatry or psychiatrists] seem to reflect a fear that any psychiatric insights may expose their own underlying mental instability, much as a patient who fears that he has cancer of the lung may be terrified of a chest X-ray."

Appeal to Illegitimate Authority.

- ▶ LeBron James recommends you use Cascade dishwashing detergent.
- ▶ You should use Cascade dishwashing detergent.
- ▶ LeBron probably doesn't do a lot of his own dishes.

Ad Hominem

- ▶ Attacks person's views based on factors irrelevant to the issue.

Ad Ignorantiam. Appeal to Ignorance.

- ▶ We do not know/haven't proven A. Therefore A is false.
- ▶ South Park

Defective Induction: Post Hoc Ergo Propter Hoc

- ▶ After that, therefore because of that.
- ▶ Spurious Correlations
- ▶ Spurious Correlations

Defective Induction: Hasty generalization

I hardly think that 58 is the right age at which to talk about a retirement home unless there are some serious health concerns. In this era, when people are living to a healthy and ripe old age, Slatalla is jumping the gun. My 85-year-old mother power-walks two miles each day, drives her car (safely), climbs stairs, does crosswords, reads the daily paper and could probably beat Slatalla at almost anything.

Defective Induction: Anecdotal Evidence.

“A Volvo! You’ve got to be kidding. My brother-in-law had a Volvo. First, that fancy fuel injection computer thing went out. Had to replace it. Then the transmission and the clutch. Finally sold it in three years for junk.”

Opposite of Hasty Generalization: Accident

While hasty generalization is when we move from particulars to general or universal statements, we can move too quickly from generalizations to particulars.

Cutting people with a knife is a crime. Surgeons cut people with knives. Surgeons are criminals.

Part-Whole: Fallacy of Division.

- ▶ My car is heavy. Therefore, my rear-view mirror is heavy.

Part-Whole: Fallacies of Composition

This is a Fallacy of Composition - People are made out of atoms. - atoms are invisible. - Therefore, people are invisible

Pro-Con

- ▶ Only looks at half of the picture.

False Dilemma.

Gerda Reith is convinced that superstition can be a positive force. "It gives you a sense of control by making you think you can work out what's going to happen next," she says. "And it also makes you feel lucky. And to take a risk or to enter into a chancy situation, you really have to believe in your own luck. In that sense, it's a very useful way of thinking, because the alternative is fatalism, which is to say, 'Oh, there's nothing I can do.'

Argumentum Ad Baculam. Appeal to Force.

- ▶ Agree or I will hurt you.

Complex Question.

- ▶ Did you stop beating your wife.

Also cool: The Negative Pregnant

- ▶ No . I have not come to class while high on *cocaine*.

Also cool: Texas sharpshooter fallacy

A Swedish study in 1992 tried to determine whether or not power lines caused some kind of poor health effects. The study found that the incidence of childhood leukemia was four times higher among those that lived closest to the power lines, and it spurred calls to action by the Swedish government. The problem with the conclusion, however, was that the number of potential ailments, i.e. over 800, was so large that it created a high probability that at least one ailment would exhibit the appearance of a statistically significant difference by chance alone. Subsequent studies failed to show any links between power lines and childhood leukemia, neither in causation nor even in correlation

Also cool: No True Scotsman

Imagine Hamish McDonald, a Scotsman, sitting down with his Glasgow Morning Herald and seeing an article about how the “Brighton [(England)] Sex Maniac Strikes Again”. Hamish is shocked and declares that “No Scotsman would do such a thing”. The next day he sits down to read his Glasgow Morning Herald again; and, this time, finds an article about an Aberdeen [(Scotland)] man whose brutal actions make the Brighton sex maniac seem almost gentlemanly. This fact shows that Hamish was wrong in his opinion but is he going to admit this? Not likely. This time he says, “No true Scotsman would do such a thing”

Slippery Slope

[I]f once a man indulges himself in murder, very soon he comes to think little of robbing; and from robbing he comes next to drinking and Sabbath-breaking, and from that to incivility and procrastination. Once begin upon this downward path, you never know where you are to stop. Many a man has dated his ruin from some murder or other that perhaps he thought little of at the time.

Inconsistency

Inconsistency is the most important fallacy – the most important deceptive error of thinking.

Self-Refuting Statements

that of a self-refuting statement – a statement that makes such a sweeping claim that it ends up denying itself.

Statistical Syllogisms

Statistical Syllogism

N percent of A's are B's. X is an A. This is all we know about the matter. ∴ It's N percent probable that X is a B.

Independent

Prob of (A and B) = prob of A X prob of B.

Mutually Exclusive

Prob of (A or B) = prob of A + prob of B.

Not Mutually Exclusive

Prob of (A or B) = Prob of A + prob of B - prob of (A and B).

This holds even if A and B aren't independent:

Prob of (A and B) = Prob of A X (prob of B after A occurs).

Probability and Philosophy

- ▶ Ratio of observed frequencies: We've observed that coins land heads about half of the time.
- ▶ Ratio of abstract possibilities: Heads is one of the two equally likely abstract possibilities.
- ▶ Measure of actual confidence: We have the same confidence in the toss being heads as we have in it not being heads.
- ▶ Measure of rational confidence: It's rational to have the same confidence in the toss being heads as in it not being heads.

Expected Values

PLAYING. There are two possible outcomes: P1 (I win) and P2 (I lose). P1 is $1/36$ likely and gains \$3,536; P1 is worth $(1/36 \times \$3,536)$ or \$98.22. P2 is $35/36$ likely and loses \$100; P2 is worth $(35/36 \times -\$100)$, or -\$97.22. The expected gain of alternative P is $(\$98.22 - 97.22)$, or \$1.