Fallacies of Reasoning

TYPES OF FALLACIES

The logician S. Morris Engel proposes in his book *Without Good Reason* (2000) that all fallacies of reasoning can be divided into these three categories:

1. Ambiguity: the reasoning fails because of at least one crucial ambiguity, either in the premises or in the conclusion.
2. Presumption: the reasoning fails because of an erroneous presumption embedded in the argument.
3. Relevance: the reasoning fails because it depends on a factor that is in fact irrelevant to the question under consideration.

Fallacies of Ambiguity

Ambiguity:

A sign reads, "Old Cow Pasture." Does it mark a pasture for old cows, or an old pasture for cows of any age?

❖ This one is a simple example of ambiguity on the level of language. It may be cleared up by a simple restatement.

Here is a more complex example:

❖ Both of the following assertions are commonly believed in our society:

> People have equal rights.

> The right to own property is a basic right.

❖ But is the following conclusion valid?

> Therefore, everyone has equal property rights.

❖ Most Americans consider it valid if the conclusion is interpreted as "an equal right to own property." Most consider it invalid and in fact revolutionary if interpreted as "a right to ownership of equal property."

Division:

When we argue that a characteristic of a group necessarily applies to all members or to any particular individual member of that group, we commit the fallacy of division.

Example:

- ❖ Group property: The average American family has 1.8 children.
- ❖ Fallacy of division: Therefore, if you are an average family, you must have 1.8 children.

Composition:

The fallacy of composition is the inverse of the fallacy of division; it occurs when we take the properties of an individual or individuals and argue that they necessarily apply to a whole group to which those individuals belong.

- ❖ Individual property: Lebron James is the best basketball player in the NBA.
- ❖ Fallacy of composition: Therefore, the Cleveland Cavaliers are the best team in the NBA.

Equivocation:

This fallacy occurs when we use two different meanings of the same term in the same argument.

- ❖ One example is Abbott & Costello's classic comedy sketch, "Who's On First?" This famous sketch was actually based on Lewis Carroll's [Alice] Through the Looking Glass.
- ❖ http://www.youtube.com/watch?v=sShMA85pv8M

Fallacies of Presumption

Non Sequiturs:

The Latin phrase non sequitur means "it does not follow." We commit a non sequitur when our conclusion does not follow from our premises, or, in Toulmin terms, when our grounds do not support our claim. Virtually all fallacies are at some level non sequiturs.

- ❖ Claim: Jack loves the movies.
- ❖ Grounds: He went to the movies for three nights in a row.

Begging the Question:

Begging the question means that there is something about the way you have stated one or more of your premises that already assumes your conclusion to be true. Here is an example of a syllogism that could be said (particularly by a pro-choice advocate) to beg the question:

- ❖ Major premise: Murder is wrong.
- ❖ Minor premise: Abortion is baby murder.
- ❖ Conclusion: Therefore, abortion is wrong.

The minor premise begs the question because it assumes that abortion is wrong (by defining it as murder). The logic of a syllogism only works if there is agreement that both the major and minor premises are in fact true. In the case of the abortion debate, one side's argument is that abortion is not the same as murder because a fetus is not a baby. That side does not consider the minor premise here to be true and would therefore accuse anyone who made this argument of begging the question.

Many Questions:

This fallacy occurs when someone asks a question that is impossible to answer accurately unless one or more implicit assumptions within the question happen to be true. (It is closely related to begging the question.)

- ❖ The classic example is, "When did you stop beating your wife?"
- ❖ Another example is, "When did you first become interested in communism?"

The first question assumes that the person has in fact beaten his wife, and the second assumes that the person has in fact been at some point interested in communism.

Post Hoc, Ergo Propter Hoc:

This Latin phrase means, "after this, therefore because of this." People usually shorten the phrase and simply refer to the "post hoc fallacy."

The claim "B occurred after A occurred" is simply not the same as "B occurred because of A," yet we commit this fallacy on a routine basis.

- ❖ Example: After infant vaccinations became more widespread and even mandatory for public-school attendance, more young children developed autism.

Hasty Generalization:

This fallacy is commonly known as "jumping to conclusions." It happens when we make a leap from an observation about one or a few instances of something to the (false) conclusion that our observation applies to ALL instances of that particular category. It usually applies to inductive reasoning.

- ❖ One broad example of this fallacy is our tendency to stereotype people according to our assumptions about race, nationality, gender, etc.

Slippery Slope:

This fallacy is the assumption that because one thing is allowed to occur, a whole chain of events will necessarily follow. Of course, sometimes one event does necessarily lead to another (the laws of physics and mathematics make certain of that), but the same necessity is not logically valid in most human situations.

- ❖ True observation: Automobiles cause more deaths than handguns.
- ❖ Slippery slope argument: If we outlaw handguns in order to save some lives, then pretty soon we'll have to outlaw automobiles, too.

Straw Man:

We create a "straw man" when we reframe, exaggerate, or otherwise distort our opponent's position in order to make it easier for us to attack. The straw man's position is usually much more radically conservative or liberal than your opponent's actual position, and it may be so extreme that few if any people (let alone your opponent) would actually defend it. In these cases, we prefer to fight against "straw men"—who are easily defeated—rather than arguing with actual thinking people who have complex and nuanced reasons for their positions.

Either/Or AKA False Dichotomy:

This fallacy occurs when we paint situations or decisions as simple choices between only two possible options, rather than recognizing an array of options, creative or "outside the box" solutions, or compromises.

- ❖ Example: Either we get tough on illegal drug users, or we just go ahead and legalize all drugs.
- ❖ Really? Couldn't we legalize only marijuana and also get tough on users of the remaining illegal drugs at the same time?

Fallacies of Relevance

Red Herring:

This fallacy involves distracting the audience by throwing in a consideration that is irrelevant to the topic at hand.

The term comes from the fact that cured herring or rotten herring is a reddish color and has historically been used by fugitives to throw pursuing hounds off the track.

- ❖ Claim: The U.S. should not make reducing carbon emissions a priority.
- ❖ Red herring grounds: A lot of the people who make noise about global climate change are atheists.

Tu Quoque:

This Latin phrase means "you, too." This fallacy occurs when we judge an argument based on how well the arguer lives out the principle of his or her argument. For example, if your parents forbid you to smoke because it's highly addictive and unhealthy, but they smoke themselves, you might respond, "You're just hypocrites! Why can't I smoke if you smoke?"

The truth is that your parents' smoking has nothing to do with the strength of their argument that smoking is unhealthy and addictive. In fact, their own experience as smokers might actually strengthen their case against it.

Ad Hominem:

This phrase comes from the Latin for "against the person" (as opposed to "against the argument).

❖ If John Doe argues against prayer in public schools, and you argue against him by pointing out that he was once convicted of DUI, you have discredited him as a person— but you have not demonstrated that his argument against prayer in public schools is invalid.

Other Fallacies of Relevance include:

❖ Genetic Fallacy
❖ Guilt By Association
❖ Poisoning The Well
❖ Appeal To Authority
❖ Appeal To Fear
❖ Appeal To Ignorance