Lecture 3.1 INFORMAL FALLACIES

TOPIC: Introduce Informal Fallacies.

KEY TERMS/GOALS: Learn several definitions and examples of informal fallacies. Be able to spot them in people's arguments, media, etc.

6 ways to critique an argument.

READING:

The primary reading is Arthur, ch. 5 (on E-reserves.)

Look up several informal fallacies on the internet, including Fallacy.Files.org. The more you learn, the more you will be able to spot them in media.

Download “Informal Fallacies PPT slides” which are slides of several informal fallacies. These are found in Lectures module.

Under “Assignments” folder on Course Content, you will find instructions for your Critical Thinking Assignment. Download:

1) “Critical Thinking Assignment Instructions”,
2) “Tips for Critical Thinking Assignment,” and
3) “Tips for Writing papers.”

Also, 4) read several sample essays from former students.

CONTENT:

Arthur explains that “reasoning is about what people should believe, based on evidence” (2004: 35) and he points out that reasoning can be “good” or “bad” depending on whether the premises sufficiently support their conclusion. We have looked at arguments from FORMAL LOGIC, which deals with the structure of DEDUCTIVE and INDUCTIVE arguments. Now, however, we will turn to an analysis of people's arguments from INFORMAL LOGIC, which looks at the methods or ways that people reason in general.

Deductive logic is used in the sciences (i.e. proving that objects must fall because of the law of gravity). But most people do not offer deductive arguments in their everyday life. When you try to persuade your friend to join a class, or to persuade your girl or boy friend to do the dishes, you don't intend to prove that the conclusion is true. If you offer an argument that “doing dishes is good exercise because you have to stand up and your arms are moving,” you are not trying to guarantee the truth of the conclusion from the premise. Rather, you intend to offer an argument that might be probably or basically true. Informal logic is the critique of everyday reasoning, and INFORMAL FALLACIES are common mistakes in reasoning. Arthur notes “there are some forms of bad argument to which human beings are especially vulnerable” (2004: 42). Informal fallacies, then, are a list of common flaws in reasoning.

Download “Informal Fallacies PPT slides” under “handouts” folder, which give a list of several important informal fallacies. You will not be tested on every one, but they are important to know for your Critical Thinking Assignment. The more you read and understand, the easier it will be to spot informal fallacies in the media.
Lecture 3.1 INFORMAL FALLACIES

Warning: These can be fun and addictive. Try learning several everyday (browse the internet—there are hundreds of informal fallacies). Soon you will spot informal fallacies in commercials, the opinion section of the newspaper, your friends and family, and even yourself. This kind of critical thinking is an art form: Each specific instance of a fallacy that has been committed is slightly different, and it is up to you to argue your case for why the instance was really a fallacy. You'll see that some arguments can be interpreted to be one or more different fallacies, so your job is to argue why it is the fallacy you have chosen.

Each fallacy in the slides is listed under a heading, which is the broad category of that fallacy. For example, the definition of “begging the question” then the general category is “Fallacy of Presumption,” because begging the question presumes (assumes the conclusion) that what it is arguing for is already true. You will ONLY need to use “begging the question” or the name of a fallacy. Do not use the broad category to label a fallacy.

These slides are intended to introduce you to several fallacies. Then, when you look at the opinion section of the newspaper and spot a fallacy, you must research that fallacy further. Do not think that you know the definition of “begging the question,” or “ad hominem” until you look it up on the internet. I will mark you down if you do not understand the fallacy, because that indicates that you have not done your research. Further instructions for your Critical Thinking Assignment is found under Assignments folder in Course Content.

Examples of Informal Fallacies:

*Ad hominem:

We have all come across stereotypes or name-calling. An ad hominem is a fallacy where name-calling is used to support someone’s argument that someone else’s argument is false. You must be careful—stereotypes or name-calling alone does not constitute an ad hominem. Rather, as with all fallacies, the ad hominem is used against someone’s argument. Let me explain:

There are two players involved: One person (Person A) makes an argument. He might say “Civil rights should be protected, because all humans are created equal.” Here we have an argument as such:

P1. All humans are created equal.

C. Civil rights should be protected.

Then, a critic comes along (Person B) and says that Person A’s argument fails because Person A “owns slaves, and anyone who owns slaves is against civil rights.” Person B is attacking Person A himself, rather than attacking the original argument directly. That is, Person B is attacking Person A for owning slaves (or it can be any character flaw or attack about the person). Person B thinks that since Person A owns slaves, that anything that Person A argues must be false, since he has done something wrong (i.e. he owns slaves).

The problem with the fallacy is that Person B does not attack the original argument directly. That is, Person B says nothing about whether the conclusion “civil rights should be protected” is right or wrong. He has offered no reasons for or against this argument, rather he attacks the person who has made the argument. Person B needs to argue why civil rights should not be protected, rather than attack Person A.

The ad hominem is one example of the general category of “Fallacy of Irrelevance.” It is irrelevant who made the original argument that “civil rights should be protected.” It is also irrelevant whether that author is Black, white, owns slaves, is a mass murderer, cheated on his wife, or has a flawless character. Who makes an argument is irrelevant to whether or not the argument is right or wrong.
Let me demonstrate why it is bad reasoning to attack the author of an argument rather than the argument itself. Someone who has a flawless character, like Mother Teresa, could still make arguments that are false. She could say, for example, that “Everyone should give to charity because it is the morally right thing to do.” This argument, however, could be shown to have exceptions: Certainly starving children in Ethiopia should not give to charity (they have nothing to give). So, an argument can be false, even though the author is a good person.

A contrasting case is someone who does evil things, like Hitler, could make arguments that are true. Hitler could argue that “Eating vegetables is better than eating meat because it saves animals and the environment.” You could argue that his reasons are sound because, indeed, we do want to protect animals and the environment. So, whether or not the argument is true has nothing to do with the actions or character of the person making the argument.

It is important that you state the original argument first, and then give the ad hominem. In your assignments, you must lay out the premises and conclusion of Person A (whoever the author is attacking) and then give the argument of Person B (the author of the opinion piece, for example). Without stating the original argument, it is impossible to critique the person who actually makes the ad hominem attack.

Here are other cases of ad hominem fallacies:

1. A prosecutor asks the judge to not admit the testimony of a burglar because burglars are not trustworthy.

2. “What she says about Johannes Kepler's astronomy of the 1600's must be just so much garbage. Do you realize she's only fourteen years old?”

3. Francis Bacon's philosophy should be dismissed since Bacon was removed from his chancellorship for dishonesty.

4. Prof. Smith says to Prof. White, "You are much too hard on your students," and Prof. White replies, "But certainly you are not the one to say so. Just last week I heard several of your students complaining."

5. “I can't see that we should listen to Governor Smith's proposal to increase the sales tax on automobiles. He has spent the last twenty years in state government and is hardly an unbiased source.”

* “Post hoc ergo propter hoc” and “Cum hoc ergo propter hoc”.

“Post hoc ergo propter hoc” is Latin for “after this, therefore because of this.” The fallacy applies when there are two events that are correlated, and one event is thought to cause the other event. For example, in the 80’s President Reagan declared that Ketchup was considered a vegetable, and allowed school lunches to count Ketchup as a serving of vegetables. After this initiation, math scores increased. If someone argues that “Ketchup causes math scores to increase” then they might be making a post hoc fallacy, in believing that one event caused another event. In order to show that the fallacy is being made, one has to argue why it is NOT the case that Ketchup causes math scores to increase.

A similar fallacy is “Cum hoc ergo propter hoc” which is Latin for “with this, therefore because of this.” The difference is that cum hoc fallacies involve a third factor, or another event that is the real cause. In a cum hoc there are three events, A, B, and C. A is said to cause C (like in a post hoc), but the third factor (event B) is not being considered as the real cause. For example, someone might argue that “increase in shoe size causes an increase in math scores.” Event A (increase in shoe size) is said to cause event C (increase in math scores), but
the problem is that event B (the growth of children) is not being considered as the real cause to BOTH A AND C. That is, the normal growth of children causes both shoe sizes AND math scores to increase.

There have been studies in the media about how drinking coffee is correlated with a decrease in symptoms of Alzheimer's disease. (for example, from Science Daily, retrieved May 18, 2010 at http://www.sciencedaily.com/releases/2010/05/100517111937.htm). The details of these studies must be considered, but there MIGHT be a possible cum hoc ergo propter hoc fallacy involved. A third factor should be considered, namely leading active lives. That is, people who lead active lives (who are active daily, both physically and mentally) may have a reduction in Alzheimer’s disease, and they also might drink more coffee (than inactive people) because they need to stay alert and awake to carry out their daily activities. So, leading an active life could cause both the drinking of coffee and a reduction in symptoms of Alzheimer's disease. (Bear in mind that if I were to argue this, I would have to support my case with statistical evidence that leading an active life reduces the chance of getting Alzheimer's).

Slippery Slope:

A “slippery slope” fallacy is fairly common because it makes use of our tendency to exaggerate. The fallacy occurs when someone argues that “a relatively small first step inevitably leads to a chain of related events culminating in some significant impact” (Wikipedia: 2010). The argument relies on several steps will occur to finally lead to a catastrophic event. Since we don’t want the catastrophe, then we should not accept the first step.

You must be careful in explaining slippery slopes: The author’s argument is not the same as the steps of the slippery slope.

For example, suppose someone argues that “we should not legalize marijuana because then everyone will smoke and become lazy and they won’t work and our whole economy will collapse.” The author’s argument is:

P1. If we legalize marijuana, then the economy would collapse.

P2. We don’t want the economy to collapse (unstated assumption).

C. Therefore we should not legalize marijuana.

The slippery slope occurs in the first premise. Several steps are used to support the possibility that the first event A (legalizing marijuana) will lead to further steps B, C, . . . and finally the last catastrophe, Z (the economy will collapse. Here are the steps:

A. Marijuana is legalized.

B. Everyone will start smoking.

C. Smoking will cause a general laziness in people.

D. People who smoke won’t want to work.

E. Companies will lose productive workers.

F. People will quit work or be fired.

Z. Finally, the economy would collapse.
Now, to explain why the argument is fallacious, consider that each of these steps do NOT necessarily have to occur even if we do legalize marijuana. For example, even if we legalize marijuana, not everyone will necessarily start smoking. Perhaps many people will choose not to smoke. Also, even if people do start smoking, it is not clear that they will become lazy, nor is it clear that they will necessarily become non-productive at work or quit their jobs. So, it is not clear that each step that is thought to occur will necessarily be the case.

Slippery slopes are named as such because they assume that if the first step happens, then worse and worse things will occur, and pretty soon it is like we are falling down a hill to inevitable doom. But these fallacies are dangerous. Each step needs its own support with argument and evidence. Without providing evidence that each step will necessarily occur, then the last step is just based on someone’s intuition. The problem with relying on intuitions of this kind, though, is that it is easy to exaggerate the danger of events.

Straw Man, Genetic Fallacy, Confirmation Biase, and Hasty Generalization are other common informal fallacies. I will write explanations of some of these on the Discussion Board, but I invite you to explain them yourselves. Look up the definitions on FallacyFiles.org and in the Informal Fallacies Powerpoint slides. Summarize a few of these in the Discussion Board.

SIX WAYS TO CRITIQUE AN ARGUMENT:

As we start reading philosopher’s original texts, you will be required to recognize and analyze their arguments. Here are six things you can do to critique an argument:

1. Check for validity (if it is a deductive structure).
2. Check for soundness (e.g. are the premises true?).
3. Check for strong or weak sample sizes (if it is an inductive argument).
4. Check for unstated assumptions in the argument.
5. Check for unwanted or absurd consequences of an argument (i.e. assume the argument is sound).
6. Check for informal fallacies.

CHEERIOS EXAMPLE.

Here is an example of how you might critique the following argument:

On the back of a Cheerios Cereal box, it says ”Studies show that people who eat more whole grain tend to have healthier body weights. Multigrain Cheerios has 5 whole grains and 110 lightly sweetened calories per serving, which makes it a great first step to help manage your weight.

Let’s examine this argument formally, as well as see if there are any informal fallacies.
First, we can outline the argument in a deductive form:

P1. If you eat whole grains, then you will have a healthier weight.

P2. Cheerios has whole grains.

C. Cheerios will give you a healthier weight.

Note that there are several ways to outline an argument, depending on what you think the conclusion is. You could also say:

P1. If you want to lose weight, then eat Cheerios.

P2. You DO want to lose weight.

C. Eat Cheerios.

I write two arguments here to demonstrate that it is up to YOU to extract an appropriate argument.

Now, even though I've written the argument as a deductive argument (in valid modus ponens format), it is not quite right to say that this is a deductive argument. The reason is that the Cheerios company doesn't intend to PROVE that the conclusion is necessarily true if the premises are true. That is, they don't intend to say that it will absolutely be the case that you lose weight if you eat Cheerios. Rather, the company is arguing that IT IS LIKELY or PROBABLY TRUE that you will lose weight. For that reason, lets consider this an INDUCTIVE ARGUMENT.

Let's look at the evidence they are using to show that the inference "if you eat whole grains, then you will have healthier weights" is true. The evidence is based on a population of individuals (let's say they surveyed 1000 people), where most individuals lost weight. Let's outline the evidence in an Inductive format:

P. Persons 1-800 lost weight eating whole grains.

C. Therefore MOST people will lose weight eating whole grains.

We notice that if 800 people tested out of 1000 lost weight, then 80% of people tested lost weight. That means MOST people who were tested lost weight. Now we INFER by using INDUCTIVE REASONING, that most people in the whole population (those not tested) will show the same results. To sum, the evidence used in the Cheerios example is based on inductive reasoning.

Let's turn to giving a critique of the argument above. The Cheerios company wants to persuade you to eat Cheerios based on the reasoning that most people have healthier weights by eating Cheerios. What's wrong with
this argument? Are there any assumptions in the premises? (I.e. Is it always good to have healthy body weights? Is eating cheerios the ONLY way to have healthy body weights?) Does it use a strong sample size (we’d have to look up the study to see what sample size they use)? Are there any bad consequences of eating Cheerios or having healthy body weights? Are there informal fallacies being committed?

I will argue that there IS an informal fallacy being committed. It is called “cum hoc ergo propter hoc.” (Translated, this means “with the event, therefore because of this event.”) This fallacy assumes that one thing causes another, without considering third factors which commonly cause both factors (FallacyFiles.org). In other words, Event A is said to cause Event B, but in fact, Event C caused both A and B. Take for example, the correlation between high ice-cream consumption, and an increase in the number of drowning. If someone said that “eating ice cream causes drowning” then they would be committing the fallacy by not considering that a third factor, the fact that it is summertime, causes both high ice-cream consumption, and an increase in drowning.

The Cheerios company has committed a cum hoc ergo propter hoc by not considering that a third factor, namely C: motivation to be healthy, plays an important causal role in the events A: Eating whole grains, and B: having healthy body weights. If someone is motivated to be healthy, then that person will do all sorts of things that she believes will achieve this goal: Eat more fruits and vegetables, exercise, drink more water, have smaller portions of dinner, skip desserts, and other activities. Being motivated to be healthy, therefore leads to eating Cheerios as well as doing other things that result in weight loss. It is not the case, as the Cheerios company wants us to believe, that eating Cheerios is the only direct factor in having healthy body weights.

I’ve argued that the Cheerios argument commits a cum hoc ergo propter hoc informal fallacy. Now it is important to see why this fallacy is harmful. If someone believed the Cheerios argument, then they might think that all they have to do in order to have a healthy body weight is to eat Cheerios. This person might not exercise, watch their portions, eat dessert, and do other unhealthy things that will actually cause their weight to increase. They are acting on a false inference that eating Cheerios is the sole cause of losing weight. But this is false. The sole act of eating Cheerios does not directly cause healthy body weights. Rather, eating Cheerios in combination with other activities, will influence the effect of healthy body weights.

**ASSESSMENT:**

Your first Critical Thinking Assignment is due February 18. Be sure to read the opinion section of the newspaper each day, as this is the best source to spot people’s informal fallacies. Do this EARLY, and do NOT procrastinate your assignment. Although fallacies are common, it will take you some time to develop the skills in being able to identify them.

**DISCUSSION QUESTIONS:**

Explain your favorite fallacies on the Discussion Board. It would be helpful to you and your co-students to research 3 or 4 fallacies, give a one-paragraph explanation, definition, and examples to those fallacies. I will do the same, as some of the fallacies are tricky (but very useful and important).

Spot fallacies in commercials, politicians, tv, your friends, etc. and post them on the discussion board.

And, have fun with these! Develop your skills of identifying informal fallacies and being able to argue why they are bad. This will be the most useful and empowering skill you will learn.