Critical Thinking

A man will be imprisoned in a room with a door that's unlocked and opens inwards; as long as it does not occur to him to pull rather than push.

- Ludwig Wittgenstein

'When I use a word,' Humpty Dumpty said in rather a scornful tone, 'it means just what I choose it to mean - neither more nor less.'

- Lewis Carroll

In order to read well, in order to write well, and in order to think well, we must understand logic. This is not to say that we must set aside our feelings, or that there is not value in trusting our intuitions. Nor is it to say that there aren't powerful, ethical ways to make your point that don't involve much logic, but even if you mainly use these modes when you argue, if you make a terrible and obvious logical error in the middle of your impassioned plea, your argument will still fail, no matter its form.

At the same time, many arguments that you will encounter, particularly in school, will be firmly rooted in logic. To truly appreciate the arguments and patterns of thought that you are being exposed to, you must have the tools to appreciate those argument. Logic supplies those tools.

Logic is a central part of critical thinking, though we've looked at (and will look at more) many other important tools for this task: careful, critical reading, synthesis, and an understanding of the evidence and the sources in their proper context, all of which are also vital.

Logic is a method of thinking as old as mathematics, and almost as useful. If logic has a weakness, it is that it tries to apply mathematical thinking to the world of language, and, by its nature, language is slippery, which makes logic work to master, and never as certain in its outcomes as 2+2=4. Where this is a weakness, it is also a strength because it means that the tools, and many of the outcomes which we normally associate with math can be applied to language too, and by people who are not all that comfortable with giant piles of numbers and symbols. For logic to work well then, we must combine it with other techniques and skills, like defining our terms, or, as we mentioned just above, critical reading, so that our logic tools have the proper materials to operate on. The best hammer in the world will not help you if your only nail is so old and rusty it will shatter when you try to drive it home.

It would require a textbook, or, more likely, several, to let you know everything there is to know about logic. We have only a single chapter, but we will cover the three most critical concepts in logic for constructing a sound argument: inductive logic, deductive logic, and logical fallacies.

Inductive Logic

Inductive logic is used in many (both "real world" and academic) arguments today, and often confirms or drives public policy, as well as the marketing and production decisions made by everyone from shoe manufacturers to television producers. Understanding induction is necessary if your ambition is to work in business, government or entertainment, and is no less important to a citizen voting for bills which have also been conceived and written based on the results of inductive logic. Inductive logic may be a formal activity, but is also the same tool that is being used when a professional makes an "educated guess."

Inductive logic is the tool that drives all opinion surveys (or any kind of statistical analysis that draws conclusions from limited data). In any such situation, the person doing the research attempts to gather a *representative sample*. A representative sample is a measurement of enough examples of what you are studying that when you extrapolate from that information, you can have a degree of confidence in your result. For instance, in many opinion polls you will see that many established polling organizations try to ask around 1000 people their opinion. Then, when they release their results, they'll let you know that they

polled a thousand people, and that with a sample that size (and, assuming they've taken a number of specific precautions to avoid bias), they expect a margin of error of, for example "+/- 3%." The statisticians know, that given these parameters, based on the questions they are asking, that their numbers are not off by more than 3% in either direction. So, if you asked 1000 people if they liked chocolate cake, and 900 said "yes," you could be confident that if you offered a piece of chocolate cake to everyone in America, that somewhere between 87% and 93% of them would say yes.

You can see then, that if you could consistently get reliable results from such a measurement, that you would (and as a society, we do) use it to drive decisions about everything from the effectiveness of prescription drugs, to how many of a particular make of car to manufacture, to how much money you'd have to set aside to give each person a 1% tax break.

Most inductive reasoning does not happen so formally. Think about your favorite restaurant. If you went there now, do you have an educated guess as to who your server would be or how long your food would take to arrive, or what today's specials might be? You probably do. If you went and tested it, you'd probably be right. You might even be able to win a bet about it with someone who didn't know the restaurant well. We can, do, and should rely on reasoning like this every day, but we need to understand, too, that it has its limits.

The Psychologist Peter Gray has discussed three biases that may influence the outcome of inductive reasoning. Professional polling organizations and scientists have techniques for minimizing and correcting these biases, but not for eliminating them entirely. Because of this, it's important to critically think about other people's use of induction, and, because there is a good chance you are neither a scientist nor a professional polling organization, to critically think about your own use of it as well.

The first bias he identifies is the "availability bias." This means that we tend to assume that the information available to us is representative. In a very simple sense, this means that if you grew up in a neighborhood where everyone wore a flannel shirt, you might assume the same holds true everywhere. As a more sophisticated example, if you ask people what they are afraid of, they will tend to identify threats which are regularly reported in the media, like terrorism or violent crime or (if it is the "issue of the week") shark attacks, rather than the things that tend to kill just about everyone: heart disease, cancer and automobile accidents.

The second bias is the "conformation bias." Simply put, this means that we tend to look for evidence that confirms what we already believe, and ignore or minimize evidence that contradicts it. As a formal logical fallacy, we call this "Stacking the Deck," but it most often happens unconsciously, without the person doing it being aware that they are doing it.

The third bias is the "predictable world" bias, which leads us to imagine that the world is a predictable place and that things happen for a reason. While this may often be true, it is not an assumption that can be relied on. This kind of bias is what leads sports figures to engage in ritual behaviors before a game (or you to wear your "lucky sweater" for a big date), and gamblers to gamble more than they can afford based on the fact that they "know" that soon their luck will change.

Lastly, you might have heard the phrase *Occam's Razor* in regards to logic. Occam's Razor, also known as *parsimony,* is a rule of thumb (another induction) that tells us that when forming a hypothesis, that the simplest explanation for something tends to correspond to the facts. While this may seem like a very simple rule to apply, it also must be used with caution. Logisticians and scientists will warn you that even though a premise like "Then a miracle happens" may *seem* simplest, that it actually introduces additional complexity, requiring both an understanding of how the thing occurred, and then an explanation of the agent that performed the action. Simplest, for our purposes, means *the simplest that can be completely explained using current facts, tools and techniques*.

Deductive Logic

You've probably at some point in your life watched one of the CSI (Crime Scene Investigation) shows on television. You might even have noticed that modern investigators (at least fictional ones, but real life investigators do, too) will often use induction and similar methods to learn what they need to know. Deduction, though, is the original tool of investigators and detectives, and was popularized by an earlier, also fictional, detective: Sherlock Holmes.

In deductive logic, we combine several pieces of evidence we know to be facts, in a particular way, in order to reach (or at least confirm) a new conclusion. This particular technique is called constructing a *syllogism,* which is just a fancy way of talking about a specific kind of logical argument. Generally speaking, a syllogism is constructed of two or more *premises* and a conclusion. A premise is a particular, limited and fairly small *claim*, or argument. When you combine several together, you can create larger, more important statements.

The first syllogism many students learn is thousands of years old, and has been maintained because of how clearly it conveys the idea of the process. We've altered it slightly to make it more timely:

Premise 1: All people are mortal

Premise 2: Justin Bieber is a person

Conclusion: Therefore, Justin Bieber is mortal

Depending on the complexity of the argument, there may be more premises, and they may take several forms, but, in general, in deductive reasoning, we start with a generalization or assumption (hopefully one which is strongly supported or accepted by your audience), like "All people are mortal," and then we present a specific example of that principle, like "Justin Bieber is a person," and then we can draw a conclusion comfortably based on those two premises.

There are two main ways such an argument can go wrong: through bad evidence or through bad logic.

Let's look at another example:

Premise 1: Internet providers shouldn't raise fees if they deliver poor service.

Premise 2: My internet connection is down for several days a month, and very slow many other times.

Conclusion: it would be unfair for my internet provider to raise my fees.

The above example holds together much as the first one did. The first premise is not a fact but an assumption, but it is a logical and just assumption that few would argue with. The second premise (assuming proof could be supplied) is a fact, and as long as it can be proven, will stand, which then makes the conclusion both *valid* (internally consistent) and *true*.

Now, let's look at a variation on the above argument:

Premise 1: Internet providers shouldn't raise fees if they deliver poor service.

Premise 2: I have an internet connection.

Conclusion: My fees should not be raised.

While it may appear obvious to you what the issue with the above example is, when you encounter such reasoning in the real world, it will be much more skillfully disguised. Nonetheless, the principle holds. We begin with the same general principle, and, again, it's an assumption most people will agree with. If we look at the second premise, it also looks factual, so there's no problem there. Unfortunately, even though the second premise is true, it does not satisfy the conditions mentioned in the first ("poor service") and so the conclusion is not internally consistent, and cannot be supported, even though both premises are factual and/or "true."

Let's look at one more example:

Premise 1: All grocery stores charge unfairly for their products.

Premise 2: I buy groceries regularly.

Conclusion: I am being charged unfairly for groceries.

Premise 1 is again an assumption. Unfortunately, in this case, it is an assumption that would be hard to prove, as a little research would show that grocery stores have very low profit margins, and, more than likely, don't charge unreasonable prices. Premise 1 is also a sweeping generalization, which makes it incredibly easy to invalidate. You simply have to provide a single example of a grocery store that does not support the assumption, and the premise must be thrown out. Premise 2 is still factual, again, assuming that the person arguing can provide sufficient evidence. You can see then, that the conclusion in this case will be harder to draw, unless you had additional evidence that showed factually that all grocery stores were being unfair.

Special Focus: Logical Fallacies

Building an argument can be very much like building a house: you need all the right construction materials (your evidence: facts, statistics, examples, personal anecdote and expert opinion), but you also need the know-how to put them all together. That know-how consists of several elements: clear, organized writing; the conventions of documentation (in our case, MLA format), the ability to correctly and convincingly create an attribution for the source of a piece of evidence, and perhaps most importantly, a grounding in the science of logic. This text is not intended to be a primer on logic, nor, most likely, is the class you're reading it for. Without at least avoiding the worst pitfalls of logic fallacies, however, you will never be able to construct a convincing or even a satisfactory argument, either verbally or in writing.

In this section we'll explore some of the most commonly misunderstood errors in logic that inexperienced writers tend to make without realizing it, and which some highly experienced writers may commit intentionally consciously intending to mislead unsophisticated readers. Because of this later group of speakers and writers we will first explore logical fallacies so that you will be able to spot them in the writing of others. Once you are comfortable spotting them in essays by other writers, it should become easier for you to avoid them in your own writing.

Before we begin, it's important to qualify our discussion of logical fallacies in two important ways. First, you must keep in mind that these labels are not precise buckets into which any particular logical crime can be dumped. Rather, they are descriptive of the kind of failing a particular sentence, paragraph, or essay is guilty of, and as such, the categories may very well overlap each other. As a very basic example, a racial slur may be both an "Ad Hominem" attack (when personal attacks, irrelevant to the argument in question, are used to undermine one's opponents) and a "Sweeping Generalization" (applying characteristics that apply to some (or none) of a group to the entire group)—encompassing two logical fallacies in a single, brief word or phrase.

Second, you should realize that sometimes when discussing logical fallacies, "one man's meat may be another man's poison." In a discussion over a controversial scientific topic, for instance, global climate

change, it might be that persons on one side of the debate saw the other as trying to create a "False Equivalence" between two theories of unequal explanatory power, where the other side was accusing the first of "Begging the Question"—treating something as proven which was very much not proven to the accusers. Keeping this in mind*, this chapter is about spotting arguments that take the form of classic logical fallacies, and then using the recognition of those patterns to allow you as the reader to treat the statements with a respectful, but critical, eye*. In other words, if it looks like a logical fallacy, it should be treated with care & examined for error, but we should also realize that it may not look like the same to another reader with a different point of view.

Very broadly speaking, logical fallacies can be thought of as falling in to two camps: *oversimplifications* and *evasions* – though, there is some overlap between the groups. *Oversimplifications* are often the results of laziness, lack of information, or simply hasty reasoning, but they certainly can be used deliberately by a writer to manipulate the reader. *Evasions* (which include *Inappropriate Emotional Appeals*) are often more deliberate in their construction, requiring a deeper understanding of the logic that is being manipulated. For this reason, some critical readers may assume that these presentations of reasoning were created with less than noble intentions. We should always be careful of jumping to such conclusions though, as they may unfairly prejudice us against an otherwise fine writer or argument.

Sometimes even an *evasion* is just a mistake.

The Oversimplifications:

Oversimplification is a blanket term that involves leaving out complex concepts and ideas because they seem too difficult to explain.

Hasty Generalizations involve reasoning or drawing conclusions from too little evidence.
Sweeping Generalizations involve applying characteristics that apply to some (or none) of a group to the entire group.

False Equivalence is trying to take two arguments of clearly unequal value, and treating them as if they are equivalent.

False Dilemma involves the writer giving the reader only two choices, one of which is unacceptable, and the other is the writer's preference.

False Cause also called Post Hoc Ergo Propter Hoc ("after this, therefore because of this") involves asserting that one thing caused another, when in reality, it simply occurred before the second event.

False Analogy involves drawing erroneous conclusions from a comparison which has been taken beyond the point of actual similarity.

The Evasions:

Begging the Question involves stating that something is true which must be proven to the reader.

Red Herring is an attempt to distract the audience with an emotionally involving, but irrelevant piece of evidence.

False Authority uses someone who is not an authority, or not an authority on the issue in question, as the source of evidence to support a point.

Slippery Slope a slippery slope argument suggests that because one small thing happened, a much larger (and less likely) thing is sure to follow.

Stacking the Deck occurs when a writer leaves out critical, but inconvenient evidence about their argument.

Straw Man involves asserting that your opponents have made a ridiculous argument they have not made.

Inappropriate Emotional Appeals (A subset of Evasions)

Personal Attack also called Ad Hominem or "to the man" attacks happens when personal attacks, irrelevant to the argument in question, are used to undermine one's opponents.

Appeal to Pity involves using pity to attempt to circumvent the rules.

To the People involves appealing inappropriately to reader's values, beliefs, or prejudices.

Bandwagon involves appealing to reader's desire to be perceived as belonging to some group and being accepted by it.

Flattery involves "buttering up" or complimenting your audience (sometimes for accepting the author's position) in order to make them more receptive to weak arguments.

Snob Appeal involves suggesting that the audience will be more like the rich & famous if they only agree with the writer.

The *Oversimplifications*:

Hasty* and *Sweeping Generalizations are over-generalizations that can never be proven, as by their very nature a single counter example proves them false. As an example, the commonly heard stereotype "Asians are good at math" can be proven wrong simply by demonstrating that one Asian, somewhere, at some time in history, had poor math skills.

Hasty Generalizations occur when a writer draws conclusions from too little evidence. Stereotypes and, in particular racial and other kinds of prejudice, are all examples of this kind of reasoning and/or *Sweeping Generalizations*.

Sweeping Generalizations occur when a writer applies a generalization that may apply to some members of a set (or, for that matter, no members of it) to all members of that set.

Examples:

- All overweight people are jolly
- All women are poor drivers
- All Muslims support terrorism
- All white people are racist

False Equivalence is in some ways a modern logical fallacy, arising largely from the media's desire to always show two sides of any debate—even if only one of them has a respectable case or even if there may be three sides, or a dozen, or, as in our next example, only one legitimate assertion.

A 21st century reporter, transported to the 15th century, and trying to demonstrate "fairness" in telling the story of Galileo's trial and conviction for heresy (for asserting that the earth moved around the sun) might very well be tempted to explain the legitimacy (or more likely the superiority) of the church's position, based as it was on religious teachings, long standing tradition, and popular prejudice that the sun revolved around the earth, and leave a credulous viewer thinking that both sides had good arguments, or even that the church was correct.

Unfortunately for such a reporter and such a viewer, Galileo was correct: the earth moves around the sun, and as we now know, there was only one legitimate side in this argument—though that was not immediately apparent at the time.

Examples:

- 1989 a few scientists working on a shoe-string budget announced that they had achieved cold fusion—the same power that the sun uses to generate energy, but "on a desktop" and at room temperature. Some people took their claims seriously even though there was no meaningful scientific evidence that this was possible, until the larger scientific community tried to replicate their findings and could not.

- Similarly, in the recent debate about global climate change, a smaller and smaller group of scientists held out against the consensus opinion that climate change was occurring, until the weight of the evidence against them became too overwhelming to ignore. Today, though there is still debate about causes, there is little doubt that climate change is occurring, and has been for the entire history of the earth.

A *False Dilemma* (sometimes referred to as a *False Dichotomy* or an *Either/or Fallacy*) occurs when someone who is arguing offers his/her audience two and only two choices—the one they want them to pick, and another, which is criminal, immoral, illegal, disgusting, or in some other way generally unacceptable to most people of good conscience. In doing this, the author pressures the reader or listener towards a single, predetermined course of action.

The once popular cliché "my way or the highway" is the most basic form this argument can take. In 2001, George Bush's comment "You're either with us or against us," is another example of this. When you are reading, it is important to remember that few situations are so simple that we are forced to pick between just two choices.. As thoughtful readers, and as human beings who want to take charge of our own lives, we need to remember that, almost always, there are additional options.

Examples:

- You either support the president, or you support the terrorists.
- If you really cared about animals, you'd be a vegan.
- If you think women are equal to men, you're going to hell.
- If you are a liberal, you can't support the National Rifle Association.
- If you support the NRA, you can't be a liberal.

Oversimplification, otherwise known as the *Reductive Fallacy* often occurs because writers are in too much of a hurry, do not properly understand the material they are presenting themselves, or are too tired to do a proper job of explaining something. Very simply, *oversimplification* is the act of leaving out important context, facts or logical steps because, for one reason or another 'they are too difficult to explain." An oversimplification may even be true in some sense, but without including important nuances or qualifications, it loses much of its value.

Examples:

- Poverty causes crime
- Welfare causes dependency
- People who are abused as children become abusers themselves

False Cause or the *Post Hoc Fallacy* occurs when a writer assumes that because one thing occurred before another thing, that it was the cause of it. A very simple version of this might even have happened to you—have you ever found yourself wondering if, for instance, the reason it is raining is because you just washed your car or that you forgot to bring your umbrella that day?

As a larger example, Rev. John Hagee recently claimed that Hurricane Katrina was punishment from God, because "[he believed] that New Orleans had a level of sin that was offensive to God, and they were recipients of the judgment of God for that." We can all agree that Rev. Hagee is entitled to his say, and we will be discussing the differences between opinion, belief & fact in other sections of this book, but it is important to understand that physics, air pressure,

temperature, geography and weather are more than sufficient to explain the cause of hurricane, no matter how many "sins" may have been committed in New Orleans before the hurricane hit.

Examples:

- An abuser saying to their victim, "look what you made me do."
- Thinking that it rained because you washed your car.
- In any election cycle, incumbents will be blamed or praised for the current economy (which is normally the result of many different factors, over a time frame usually longer than a term of office).

Sometimes, these connections between a president or a congressman/congresswoman and the state of the economy are reasonable, and policies that those elected officials implemented have led the economy to be what it is, be that good or bad. But sometimes those forces which have led the economy to a particular state, good or bad, are completely unrelated to an incumbent's policies. Additionally, a president may have had policies to impact an economy that were blocked or weakened by Congress, and vice versa. Nevertheless, people were elected, they pursued policy changes, the economy became either better or worse, and then writers connect the state of the economy to the election and action of those officials, even if the two things are not related

A *False Analogy* is a tricky logical fallacy to spot. An analogy is an extended metaphor, or comparison, between two things which share some similarities, and in which, the writer hopes to draw useful lessons from the comparison. If you are a student of history, for instance, you might have heard the Cold War described in term of a chess match, or a poker game. You might also realize that both of these analogies contain some truth and explanatory power, but that they emphasize very different things, and they are, perhaps, contradictory on some levels (Chess emphasizes the need to have excellent strategy and to plan ahead against a single opponent. Poker, usually a game for more than two, has a great deal more to do with bluffing. But, certainly, some element of each image of the Cold War is accurate).

Often, a *false analogy* is a good and useful analogy that has been taken too far. One example of a good analogy that when taken too far loses its power (and thus becomes a *false analogy*) would be the "War on Drugs." There are things you do in war *that are equivalent* to things we might do when fighting drug trafficking—there is intelligence gathering—spies in war & detectives in the police, and there is disruption of supply lines, a key to the allied victory in World War II, and very effective when battling narcotics (as when the Allies disrupted the supply of ball bearings the Axis needed to build and repair planes, trucks, tanks and other vehicles, and today, when a private individual is limited to the amount of over-the-counter cold medicine they can buy at one time).

However, when the analogy is pushed too far, it breaks down. Drug users, for instance, to take the analogy further, might be described as "lending aid and comfort to the enemy." In a real war, that gets you shot. If we started shooting everyone who'd ever tried marijuana, for instance, the vast majority of Americans would think (and rightly so) that something had gone disastrously wrong with American values like "innocent until proven guilty," and "let the punishment fit the crime."

Example:

- 1987 when arguing against the outlawing of a pesticide that could potentially cause as many as 300,000 cancers a year, Representative Tom Delay, a former exterminator, argued that, "This bill reminds me of legislation that ought to be introduced to outlaw automobiles" in trying to make the legislation look ridiculous. The analogy between the pesticide and the automobile breaks down very quickly. One simply needs to realize that the equivalent to banning one pesticide would be the banning of one model of car. No one was trying to ban all pesticides.

The *Evasions*:

Begging the Question is particularly interesting because everything in a statement that *begs the question* can be true, but it can still be a logical fallacy because of the way the statement is made. When a writer *begs the question* they assert something to be true that their audience, at least, still requires more evidence to accept.

Examples:

- Since we all know that mercury in vaccines causes autism, it should be outlawed.
- It is well known that welfare only causes people to become lazy and complacent, so it should be outlawed.
- Rock and Roll is a communist plot to take over America (a real argument made in the United States Senate during the 1950s)

- **A *Red Herring*** argument draws its name from actual historical events. This is based on real incidents in the past, when a person was being tracked by dogs, and another person wanted to help them escape, they would use the corpse of an animal (or something similar dogs might be attracted to) to obscure the track and lead the dogs off on a false scent.

Example:

- According to the well respected English newspaper The Guardian, Alastair Campbell, the Director of Communications and Strategy for the British Prime Minister at the time, tried to turn a story about the British Government's attempt to make "the facts fit the strategy" with regard to the war in Iraq, in to a dispute about the fact that the original story was based on information from only a single source. While journalists (and writers of academic research papers) should be careful about basing an opinion on a single source (and so Mr. Campbell had a point)—if the source is unimpeachable, and the documentation is iron-clad, a single source is more than enough on which to base a story.

An argument using *False Authority* is one in which evidence is introduced from a source who is not an authority at all (these often occur because an inexperienced writer chooses a source they have not properly researched), or who is an authority, but not in the subject in question. As a very simple example, if your dentist and your plumber both give you advice about your plumbing problems, listen to your plumber. It is also important to keep in mind that if someone has been identified as an authority, but his or her name is not revealed, that you should be extremely cautious in using his or her opinion as evidence in an argument, even if apparently good reasons for anonymity have been given.

Examples:

- "I'm not a doctor, but I play one on TV"
- This fallacy is used constantly in advertising: A celebrity uses a product or purchases a reverse mortgage, therefore that product or action must be a good one
- The founding fathers believed X, and so we should do X. It is very important to understand the history which led to the establishment of our country and government. The values and beliefs of our forefathers are relevant to our evaluation of potential social change. However, our founding fathers had flaws. Washington and Jefferson were slave owners, and most of the founding father were comfortable with women having no voting rights. We should not assume that what seemed good or right for them will always be good or right for us.

A *Slippery Slope* argument is another tricky logical fallacy to spot. As with *Begging the Question,* a *Slippery Slope* might be true, but it must be considered a logical fallacy if it is not supported with convincing evidence. In a *Slippery Slope* argument, a writer argues that because a small event occurs that much larger (and more unlikely) events are certain to follow. One example often seen in composition classes is that a writer will advance the idea that Nazi Germany implemented gun control policies, and therefore, gun control policies will lead the United States to adapt a fascist government.

There are two important points that must be made. Firstly, in order for the first statement to be taken seriously, factual evidence *must* be provided. Asserting such an idea without adequate evidence is simply *Begging the Question*. Secondly, once the initial premise has been asserted, the writer *must* acknowledge the actual historical likelihood of the events happening that they assert will follow. In the case of gun control, a writer making such a case must acknowledge the dozens of modern western nations which have (in many cases very strict) gun control that have not descended into fascism, and weigh those against the one or two that have historically.

Example:

- During the Scopes "Monkey Trial", for instance, one of the attorneys, Clarence Darrow, argued that to outlaw the teaching of evolution in one state would cause the entire world to revert to the level of civilization found in the 16th century: "If today you can take a thing like evolution and make it a crime to teach it in the public school, tomorrow you can make it a crime to teach it in the private schools, and the next year you can make it a crime to teach it to the hustings or in the church. At the next session you may ban books and the newspapers. Soon you may set Catholic against Protestant and Protestant against Protestant, and try to foist your own religion upon the minds of men. If you can do one you can do the other. Ignorance and fanaticism is ever busy and needs feeding. Always it is feeding and gloating for more. Today it is the public school teachers, tomorrow the private. The next day the preachers and the lectures, the magazines, the books, the newspapers. After [a]while, your honor, it is the setting of man against man and creed against creed until with flying banners and beating drums we are marching backward to the glorious ages of the sixteenth century when bigots lighted fagots to burn the men who dared to bring any intelligence and enlightenment and culture to the human mind."

Stacking the Deck, sometimes referred to as *Cherry Picking,* is another example of a logical fallacy that only becomes a fallacy if taken too far. A good writer goes out and finds the best evidence to support his/her case, and presents that evidence boldly in defense of his/her argument: this is the writer's job. While that is true, the fallacy of *Stacking the Deck* occurs, in particular, when a writer ignores compelling evidence which is inconvenient, or even damning to their argument.

One way to avoid this error is to work to actively include the very best counterarguments. When we present a *counterargument*, we acknowledge, and explain, compelling evidence against our case in order to gain credibility and demonstrate our objectivity. When done correctly, this makes an argument stronger, and avoids the possibility of being accused of *Cherry Picking* your evidence.

Example:

- In attempting to prove the thoroughly discredited notion (in terms of the facts that have been established, the conclusions of various scientific experts, and hundreds, if not thousands, of other eye witness accounts) that 9/11 was the result of a vast conspiracy *to make it look like* the United States had been attacked by radical Islamic terrorists (when really something else entirely had happened), one radio host, Dave von Kleist, argued the following: "On our radio program, we have interviewed a two-star General, an Air Force Colonel (with 30 yrs. identifying aircraft and aircraft parts), an Army Major, Air Force Major, a 33 yr. veteran of the DoD in missile defense systems, numerous Airline pilots including an instructor, and the United Airlines pilot who flew Flight 175 up to two months before 9/11 when he retired. They agree that a 757 could not have caused the damage at the Pentagon and that the planes that hit the towers could not have been commercial aircraft. That is their opinion not mine."

A ***Straw Man*** argument is one in which a writer presents an argument, pretending that it is her opponent's argument, when it is, in fact, an outrageous distortion designed to make the person they are arguing with look stupid, deluded, or even dangerous.

Examples:

- Politician X wants to release violent felons on to the streets to rape and murder.
- If you don't support the president, you must be a terrorist sympathizer.

- Anyone who advocates teaching sex education is a pervert and a pedophile.

There are a large group of *Evasions* that function similarly, and that all tend to function by substituting *Inappropriate Emotional Appeals* for appropriate ones. Most of these fallacies occur because the two trickiest kinds of evidence, emotional appeals, and appeals to belief or need are taken too far and exaggerated.

A *Personal Attack* or an ***Ad Hominem*** argument is an attack on a person rather than on their logic, position or evidence. In its most basic form, this might consist of someone wanting to criticize a politician's stance on, say, a new freeway off-ramp, but lacking a defensible argument, instead accuses the politician of cheating on his wife. With that said, some arguments might look like *Personal Attacks*, but still be relevant to the argument being made. In the example just sited, it would be relevant and fair to note that the same politician had recently purchased, at a very low price, the land the government needed to build that same off-ramp.

Examples:

- The president's orders are illegal, because he is not a U.S. citizen.
- You shouldn't take Tiger Wood's advice on golf, because he's cheated on his wife.
- Respected Judge X should not be named to the Supreme Court because of the rumors that he is gay.

In an inappropriate ***Appeal to Pity*** or an ***Ad Miseracordiam*** argument, a writer makes the case that someone be treated unequally, because they should be pitied. In a recent example, an alleged Nazi prison guard, known at the time as "Ivan the Terrible," and responsible for the deaths of many Jews, attempted to escape extradition and trial for his crimes. According to the British Newspaper *The Telegraph*, "Mr Demjanjuk's son, John Demjanjuk Jr., said that his father is in very poor health and could not defend himself at another foreign trial." Most people of good conscience would agree that even if murders happened long ago, and the accused is in poor health, that he should still be tried for the crimes, and punished if found guilty.

Examples:

- She is very elderly, and can barely move, does she really need to clear a fire break in her yard like everyone else?
- He comes from a broken home, and he didn't steal much, perhaps this time we can just let it slide?

In a ***To the People*** or ***Ad Populum*** argument, a writer tries to use a reader's beliefs or values to manipulate the reader inappropriately. An argument, for instance, that an American citizen should not be given a fair trial because he is accused of a particular heinous crime, and that "All patriotic Americans" would agree, might be considered a *To The People* argument.

Examples:

- You cannot be a Christian and be pro-choice.
- All patriotic Americans know that, sometimes, to save lives, torture is necessary.

In a ***Bandwagon*** appeal, a writer argues that because a large group of people, particularly a group to which the reader belongs, or wishes to belong to, or shares a value or desired goal with, that the reader should also agree. In its simplest form, such an appeal might sound like "We're all going to the party, you should come too!"

Many of our mothers might respond by saying "If all your friends were jumping off a cliff, would you jump off too?"

Sometimes moms are smarter than we give them credit for.

Examples:

- Just try it one time, everybody smokes pot.
- Do you want to be the only person to graduate from high school a virgin?
- Everybody lies on their tax returns.

When a writer uses ***Flattery***, he or she first tells his or her audience how great they are, and then proceed to use that as leverage to try and make an inappropriate appeal. Many popular radio personalities use this tactic, first reassuring their audience that they are far smarter or possess far more common sense than their opponents, and only then making an argument that their listeners might not otherwise be willing to accept.

Examples:

- I'm sure that if you, like me, are just a common sense American—someone who pays their bills and loves their kids and puts their hand on their heart when they recite the Pledge of Allegiance, you understand what I do—that person X is a bad person.
- Look, you're smart people, surely you can see the logic of my position?

When someone uses ***Snob Appeal*** to make an argument, they try to convince their audience that by embracing a value, or taking a course of action, that they can be like, and perhaps be perceived like, someone who is rich, or famous, or both. When Paris Hilton writes about her fragrance for men, "Heir," saying that "It's really hot. I mixed all these scents together and when a guy wears it, it smells so good," she is, at least indirectly, using *Snob Appeal*.