

Fallacies

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Description of Fallacies

In order to understand what a fallacy is, one must understand what an argument is. Very briefly, an argument consists of one or more premises and one conclusion. A premise is a statement (a sentence that is either true or false) that is offered in support of the claim being made, which is the conclusion (which is also a sentence that is either true or false).

There are two main types of arguments: deductive and inductive. A deductive argument is an argument such that the premises provide (or appear to provide) complete support for the conclusion. An inductive argument is an argument such that the premises provide (or appear to provide) some degree of support (but less than complete support) for the conclusion. If the premises actually provide the required degree of support for the conclusion, then the argument is a good one. A good deductive argument is known as a valid argument and is such that if all its premises are true, then its conclusion must be true. If all the argument is valid and actually has all true premises, then it is known as a sound argument. If it is invalid or has one or more false premises, it will be unsound. A good inductive argument is known as a strong (or "cogent") inductive argument. It is such that if the premises are true, the conclusion is likely to be true.

A fallacy is, very generally, an error in reasoning. This differs from a factual error, which is simply being wrong about the facts. To be more specific, a fallacy is an "argument" in which the premises given for the conclusion do not provide the needed degree of support. A deductive fallacy is a deductive argument that is invalid (it is such that it could have all true premises and still have a false conclusion). An inductive fallacy is less formal than a deductive fallacy. They are simply "arguments" which appear to be inductive arguments, but the premises do not provided enough support for the conclusion. In such cases, even if the premises were true, the conclusion would not be more likely to be true.

Examples of Fallacies

Inductive Argument

Premise 1: Most American cats are domestic house cats.
Premise 2: Bill is an American cat.
Conclusion: Bill is domestic house cat.

Factual Error

Columbus is the capital of the United States.

Deductive Fallacy

Premise 1: If Portland is the capital of Maine, then it is in Maine.
Premise 2: Portland is in Maine.
Conclusion: Portland is the capital of Maine.
(Portland is in Maine, but Augusta is the capital. Portland is the largest city in Maine, though.)

Inductive Fallacy

Premise 1: Having just arrived in Ohio, I saw a white squirrel.

Conclusion: All Ohio Squirrels are white.

(While there are many, many squirrels in Ohio, the white ones are very rare).

Fallacy: Ad Hominem

Description of Ad Hominem

Translated from Latin to English, "Ad Hominem" means "against the man" or "against the person."

An Ad Hominem is a general category of fallacies in which a claim or argument is rejected on the basis of some irrelevant fact about the author of or the person presenting the claim or argument. Typically, this fallacy involves two steps. First, an attack against the character of person making the claim, her circumstances, or her actions is made (or the character, circumstances, or actions of the person reporting the claim). Second, this attack is taken to be evidence against the claim or argument the person in question is making (or presenting). This type of "argument" has the following form:

Person A makes claim X.

Person B makes an attack on person A.

Therefore A's claim is false.

The reason why an Ad Hominem (of any kind) is a fallacy is that the character, circumstances, or actions of a person do not (in most cases) have a bearing on the truth or falsity of the claim being made (or the quality of the argument being made).

Example of Ad Hominem

Bill: "I believe that abortion is morally wrong."

Dave: "Of course you would say that, you're a priest."

Bill: "What about the arguments I gave to support my position?"

Dave: "Those don't count. Like I said, you're a priest, so you have to say that abortion is wrong. Further, you are just a lackey to the Pope, so I can't believe what you say."

Fallacy: Ad Hominem Tu Quoque

Also Known as: "You Too Fallacy"

Description of Ad Hominem Tu Quoque

This fallacy is committed when it is concluded that a person's claim is false because 1) it is inconsistent with something else a person has said or 2) what a person says is inconsistent with her actions. This type of "argument" has the following form:

1. Person A makes claim X.
2. Person B asserts that A's actions or past claims are inconsistent with the truth of claim X.
3. Therefore X is false.

The fact that a person makes inconsistent claims does not make any particular claim he makes false (although of any pair of inconsistent claims only one can be true - but both can be false). Also, the fact that a person's claims are not consistent with his actions might indicate that the person is a hypocrite but this does not prove his claims are false.

Examples of Ad Hominem Tu Quoque

1. Bill: "Smoking is very unhealthy and leads to all sorts of problems. So take my advice and never start."
Jill: "Well, I certainly don't want to get cancer."
Bill: "I'm going to get a smoke. Want to join me Dave?"
Jill: "Well, I guess smoking can't be that bad. After all, Bill smokes."
 2. Jill: "I think the gun control bill shouldn't be supported because it won't be effective and will waste money."
Bill: "Well, just last month you supported the bill. So I guess you're wrong now."
 3. Peter: "Based on the arguments I have presented, it is evident that it is morally wrong to use animals for food or clothing."
Bill: "But you are wearing a leather jacket and you have a roast beef sandwich in your hand! How can you say that using animals for food and clothing is wrong!"
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Fallacy: Appeal to Authority

Also Known as: Fallacious Appeal to Authority, Misuse of Authority, Irrelevant Authority, Questionable Authority, Inappropriate Authority, Ad Verecundiam

Description of Appeal to Authority

An Appeal to Authority is a fallacy with the following form:

1. Person A is (claimed to be) an authority on subject S.
2. Person A makes claim C about subject S.
3. Therefore, C is true.

This fallacy is committed when the person in question is not a legitimate authority on the subject. More formally, if person A is not qualified to make reliable claims in subject S, then the argument will be fallacious.

This sort of reasoning is fallacious when the person in question is not an expert. In such cases the reasoning is flawed because the fact that an unqualified person makes a claim does not provide any justification for the claim. The claim could be true, but the fact that an unqualified person made the claim does not provide any rational reason to accept the claim as true.

When a person falls prey to this fallacy, they are accepting a claim as true without there being adequate evidence to do so. More specifically, the person is accepting the claim because they erroneously believe that the person making the claim is a legitimate expert and hence that the claim is reasonable to accept. Since people have a tendency to believe authorities (and there are, in fact, good reasons to accept some claims made by authorities) this fallacy is a fairly common one.

Since this sort of reasoning is fallacious only when the person is not a legitimate authority in a particular context, it is necessary to provide some acceptable standards of assessment. The following standards are widely accepted:

1. The person has sufficient expertise in the subject matter in question.

Claims made by a person who lacks the needed degree of expertise to make a reliable claim will, obviously, not be well supported. In contrast, claims made by a person with the needed degree of expertise will be supported by the person's reliability in the area.

Determining whether or not a person has the needed degree of expertise can often be very difficult. In academic fields (such as philosophy, engineering, history, etc.), the person's formal education, academic performance, publications, membership in professional societies, papers presented, awards won and so forth can all be reliable indicators of expertise. Outside of academic fields, other standards will apply. For example, having sufficient expertise to make a reliable claim about how to tie a shoe lace only requires the ability to tie the shoe lace and impart that information to others. It should be noted that being an expert does not always require having a university degree. Many people have high degrees of expertise in sophisticated subjects without having ever attended a university. Further, it should not be simply assumed that a person with a degree is an expert.

Of course, what is required to be an expert is often a matter of great debate. For example, some people have (and do) claim expertise in certain (even all) areas because of a divine inspiration or a special gift. The followers of such people accept such credentials as establishing the person's expertise while others often see these self-proclaimed experts as deluded or even as charlatans. In other situations, people debate over what sort of education and experience is needed to be an expert. Thus, what one person may take to be a fallacious appeal another person might take to be a well supported line of reasoning. Fortunately, many cases do not involve such debate.

2. The claim being made by the person is within her area(s) of expertise.

If a person makes a claim about some subject outside of his area(s) of expertise, then the person is not an expert in that context. Hence, the claim in question is not backed by the required degree of expertise and is not reliable.

It is very important to remember that because of the vast scope of human knowledge and skill it is simply not possible for one person to be an expert on everything. Hence, experts will only be true experts in respect to certain subject areas. In most other areas they will have little or no expertise. Thus, it is important to determine what subject area a claim falls under.

It is also very important to note that expertise in one area does not automatically confer expertise in another. For example, being an expert physicist does not automatically make a person an expert on morality or politics. Unfortunately, this is often overlooked or intentionally ignored. In fact, a great deal of advertising rests on a violation of this condition. As anyone who watches television knows, it is extremely common to get famous actors and sports heroes to endorse products that they are not qualified to assess. For example, a person may be a great actor, but that does not automatically make him an expert on cars or shaving or underwear or diets or politics.

3. There is an adequate degree of agreement among the other experts in the subject in question.

If there is a significant amount of legitimate dispute among the experts within a subject, then it will fallacious to make an Appeal to Authority using the disputing experts. This is because for almost any claim being made and "supported" by one expert there will be a counterclaim that is made and "supported" by another expert. In such cases an Appeal to Authority would tend to be futile. In such cases, the dispute has to be settled by consideration of the actual issues under dispute. Since either side in such a dispute can invoke experts, the dispute cannot be rationally settled by Appeals to Authority.

There are many fields in which there is a significant amount of legitimate dispute. Economics is a good example of such a disputed field. Anyone who is familiar with economics knows that there are many plausible theories that are incompatible with one another. Because of this, one expert economist could sincerely claim that the deficit is the key factor while another equally qualified individual could assert the exact opposite. Another area where dispute is very common (and well known) is in the area of psychology and psychiatry. As has been demonstrated in various trials, it is possible to find one expert that will assert that an individual is insane and not competent to stand trial and to find another equally qualified expert who will testify, under oath, that the same individual is both sane and competent to stand trial. Obviously, one cannot rely on an Appeal to Authority in such a situation without making a fallacious argument. Such an argument would be fallacious since the evidence would not warrant accepting the conclusion.

It is important to keep in mind that no field has complete agreement, so some degree of dispute is acceptable. How much is acceptable is, of course, a matter of serious debate. It is also important to keep in mind that even a field with a great deal of internal dispute might contain areas of significant agreement. In such cases, an Appeal to Authority could be legitimate.

4. The person in question is not significantly biased.

If an expert is significantly biased then the claims he makes within his area of bias will be less reliable. Since a biased expert will not be reliable, an Argument from Authority based on a biased expert will be fallacious. This is because the evidence will not justify accepting the claim.

Experts, being people, are vulnerable to biases and prejudices. If there is evidence that a person is biased in some manner that would affect the reliability of her claims, then an Argument from Authority based on that person is likely to be fallacious. Even if the claim is actually true, the fact that the expert is biased weakens the argument. This is because there would be reason to believe that the expert might not be making the claim because he has carefully considered it using his expertise. Rather, there would be reason to believe that the claim is being made because of the expert's bias or prejudice.

It is important to remember that no person is completely objective. At the very least, a person will be favorable towards her own views (otherwise she would probably not hold them). Because of this, some degree of bias must be accepted, provided that the bias is not significant. What counts as a significant degree of bias is open to dispute and can vary a great deal from case to case. For example, many people would probably suspect that doctors who were paid by tobacco companies to research the effects of smoking would be biased while other people might believe (or claim) that they would be able to remain objective.

5. The area of expertise is a legitimate area or discipline.

Certain areas in which a person may claim expertise may have no legitimacy or validity as areas of knowledge or study. Obviously, claims made in such areas will not be very reliable.

What counts as a legitimate area of expertise is sometimes difficult to determine. However, there are cases which are fairly clear cut. For example, if a person claimed to be an expert at something he called "chromabullet therapy" and asserted that firing painted rifle bullets at a person would cure cancer it would not be very reasonable to accept his claim based on his "expertise." After all, his expertise is in an area which is devoid of legitimate content. The general idea is that to be a legitimate expert a person must have mastery over a real field or area of knowledge.

As noted above, determining the legitimacy of a field can often be difficult. In European history, various scientists had to struggle with the Church and established traditions to establish the validity of their disciplines. For example, experts on evolution faced an uphill battle in getting the legitimacy of their area accepted.

A modern example involves psychic phenomenon. Some people claim that they are certified "master psychics" and that they are actually experts in the field. Other people contend that their claims of being certified "master psychics" are simply absurd since there is no real content to such an area of expertise. If these people are right, then anyone who accepts the claims of these "master psychics" as true are victims of a fallacious appeal to authority.

6. The authority in question must be identified.

A common variation of the typical Appeal to Authority fallacy is an Appeal to an Unnamed Authority. This fallacy is also known as an Appeal to an Unidentified Authority.

This fallacy is committed when a person asserts that a claim is true because an expert or authority makes the claim and the person does not actually identify the expert. Since the expert is not named or identified, there is no way to tell if the person is actually an expert. Unless the person is identified and has his expertise established, there is no reason to accept the claim.

This sort of reasoning is not unusual. Typically, the person making the argument will say things like "I have a book that says...", or "they say...", or "the experts say...", or "scientists believe that...", or "I read in the paper..." or "I saw on TV..." or some similar statement. In such cases the person is often hoping that the listener(s) will simply accept the unidentified source as a legitimate authority and believe the claim being made. If a person accepts the claim simply because they accept the unidentified source as an expert (without good reason to do so), he has fallen prey to this fallacy.

As suggested above, not all Appeals to Authority are fallacious. This is fortunate since people have to rely on experts. This is because no one person can be an expert on everything and people do not have the time or ability to investigate every single claim themselves.

In many cases, Arguments from Authority will be good arguments. For example, when a person goes to a skilled doctor and the doctor tells him that he has a cold, then the patient has good reason to accept the doctor's conclusion. As another example, if a person's computer is acting odd and his friend, who is a computer expert, tells him it is probably his hard drive then he has good reason to believe her.

What distinguishes a fallacious Appeal to Authority from a good Appeal to Authority is that the argument meets the six conditions discussed above.

In a good Appeal to Authority, there is reason to believe the claim because the expert says the claim is true. This is because a person who is a legitimate expert is more likely to be right than wrong when making considered claims within her area of expertise. In a sense, the claim is being accepted because it is reasonable to believe that the expert has tested the claim and found it to be reliable. So, if the expert has found it to be reliable, then it is reasonable to accept it as being true. Thus, the listener is accepting a claim based on the testimony of the expert.

It should be noted that even a good Appeal to Authority is not an exceptionally strong argument. After all, in such cases a claim is being accepted as true simply because a person is asserting that it is true. The person may be an expert, but her expertise does not really bear on the truth of the claim. This is because the expertise of a person does not actually determine whether the claim is true or false. Hence, arguments that deal directly with evidence relating to the claim itself will tend to be stronger.

Examples of Appeal to Authority

1. Bill and Jane are arguing about the morality of abortion:

Bill: "I believe that abortion is morally acceptable. After all, a woman should have a right to her own body."

Jane: "I disagree completely. Dr. Johan Skarn says that abortion is always morally wrong, regardless of the situation. He has to be right, after all, he is a respected expert in his field."

Bill: "I've never heard of Dr. Skarn. Who is he?"

Jane: "He's the guy that won the Nobel Prize in physics for his work on cold fusion."

Bill: "I see. Does he have any expertise in morality or ethics?"

Jane: "I don't know. But he's a world famous expert, so I believe him."

2. Dave and Kintaro are arguing about Stalin's reign in the Soviet Union. Dave has been arguing that Stalin was a great leader while Kintaro disagrees with him.

Kintaro: "I don't see how you can consider Stalin to be a great leader. He killed millions of his own people, he crippled the Soviet economy, kept most of the people in fear and laid the foundations for the violence that is occurring in much of Eastern Europe."

Dave: "Yeah, well you say that. However, I have a book at home that says that Stalin was acting in the best interest of the people. The millions that were killed were vicious enemies of the state and they had to be killed to protect the rest of the peaceful citizens. This book lays it all out, so it has to be true."

3. I'm not a doctor, but I play one on the hit series "Bimbos and Studmuffins in the OR." You can take it from me that when you need a fast acting, effective and safe pain killer there is nothing better than Morphidope 2000. That is my considered medical opinion.
4. Siphwe and Sasha are having a conversation:

Sasha: "I played the lottery today and I know I am going to win something."

Siphwe: "What did you do, rig the outcome?"

Sasha: "No, silly. I called my Super Psychic Buddy at the 1-900-MindPower number. After consulting his magic Californian Tarot deck, he told me my lucky numbers."

Siphwe: "And you believed him?"

Sasha: "Certainly, he is a certified Californian Master-Mind Psychic. That is why I believe what he has to say. I mean, like, who else would know what my lucky numbers are?"

Fallacy: Appeal to Belief

Description of Appeal to Belief

Appeal to Belief is a fallacy that has this general pattern:

1. Most people believe that a claim, X, is true.
2. Therefore X is true.

This line of "reasoning" is fallacious because the fact that many people believe a claim does not, in general, serve as evidence that the claim is true.

There are, however, some cases when the fact that many people accept a claim as true is an indication that it is true. For example, while you are visiting Maine, you are told by several people that they believe that people older than 16 need to buy a fishing license in order to fish. Barring reasons to doubt these people, their statements give you reason to believe that anyone over 16 will need to buy a fishing license.

There are also cases in which what people believe actually determines the truth of a claim. For example, the truth of claims about manners and proper behavior might simply depend on what people believe to be good manners and proper behavior. Another example is the case of community standards, which are often taken to be the standards that most people accept. In some cases, what violates certain community standards is taken to be obscene. In such cases, for the claim "x is obscene" to be true is for most people in that community to believe that x is obscene. In such cases it is still prudent to question the justification of the individual beliefs.

See also [Appeal to Popularity](#).

Examples of Appeal to Belief

1. At one time, most people in Europe believed that the earth was the center of the solar system (at least most of those who had beliefs about such things). However, this belief turned out to be false.
 2. God must exist. After all, I just saw a poll that says 85% of all Americans believe in God.
 3. Of course there is nothing wrong with drinking. Ask anyone, he'll tell you that he thinks drinking is just fine.
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Fallacy: Appeal to Common Practice

Description of Appeal to Common Practice

The Appeal to Common Practice is a fallacy with the following structure:

1. X is a common action.
2. Therefore X is correct/moral/justified/reasonable, etc.

The basic idea behind the fallacy is that the fact that most people do X is used as "evidence" to support the action or practice. It is a fallacy because the mere fact that most people do something does not make it correct, moral, justified, or reasonable.

An appeal to fair play, which might seem to be an appeal to common practice, need not be a fallacy. For example, a woman working in an office might say "the men who do the same job as me get paid more than I do, so it would be right for me to get paid the same as them." This would not be a fallacy as long as there was no relevant difference between her and the men (in terms of ability, experience, hours worked, etc.). More formally:

1. It is common practice to treat people of type Y in manner X and to treat people of type Z in a different manner.
2. There is no relevant difference between people of type Y and type Z.
3. Therefore people of type Z should be treated in manner X, too.

This argument rests heavily on the principle of relevant difference. On this principle two people, A and B, can only be treated differently if and only if there is a relevant difference between them. For example, it would be fine for me to give a better grade to A than B if A did better work than B. However, it would be wrong of me to give A a better grade than B simply because A has red hair and B has blonde hair.

There might be some cases in which the fact that most people accept X as moral entails that X is moral. For example, one view of morality is that morality is relative to the practices of a culture, time, person, etc. If what is moral is determined by what is commonly practiced, then this argument:

1. Most people do X.
2. Therefore X is morally correct.

would not be a fallacy. This would however entail some odd results. For example, imagine that there are only 100 people on earth. 60 of them do not steal or cheat and 40 do. At this time, stealing and cheating would be wrong. The next day, a natural disaster kills 30 of the 60 people who do not cheat or steal. Now it is morally correct to cheat and steal. Thus, it would be possible to change the moral order of the world to one's view simply by eliminating those who disagree.

Examples of Appeal to Common Practice

1. Director Jones is in charge of running a state waste management program. When it is found that the program is rife with corruption, Jones says "This program has its problems, but nothing goes on in this program that doesn't go on in all state programs."
 2. "Yeah, I know some people say that cheating on tests is wrong. But we all know that everyone does it, so it's okay."
 3. "Sure, some people buy into that equality crap. However, we know that everyone pays women less than men. It's okay, too. Since everyone does it, it can't really be wrong."
 4. "There is nothing wrong with requiring multicultural classes, even at the expense of core subjects. After all, all of the universities and colleges are pushing multiculturalism."
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Fallacy: Appeal to Consequences of a Belief

Includes: Wishful Thinking

Description of Appeal to Consequences of a Belief

The Appeal to the Consequences of a Belief is a fallacy that comes in the following patterns:

1. X is true because if people did not accept X as being true then there would be negative consequences.
2. X is false because if people did not accept X as being false, then there would be negative consequences.
3. X is true because accepting that X is true has positive consequences.
4. X is false because accepting that X is false has positive consequences.
5. I wish that X were true, therefore X is true. This is known as Wishful Thinking.
6. I wish that X were false, therefore X is false. This is known as Wishful Thinking.

This line of "reasoning" is fallacious because the consequences of a belief have no bearing on whether the belief is true or false. For example, if someone were to say "If sixteen-headed purple unicorns don't exist, then I would be miserable, so they must exist" it would be clear that this would not be a good line of reasoning. It is important to note that the consequences in question are the consequences that stem from the belief. It is important to distinguish between a rational reason to believe (RRB) (evidence) and a prudential reason to believe (PRB) (motivation). A RRB is evidence that objectively and logically supports the claim. A PRB is a reason to accept the belief because of some external factor (such as fear, a threat, or a benefit or harm that may stem from the belief) that is relevant to what a person values but is not relevant to the truth or falsity of the claim.

The nature of the fallacy is especially clear in the case of Wishful thinking. Obviously, merely wishing that something is true does not make it true. This fallacy differs from the [Appeal to Belief](#) fallacy in that the [Appeal to Belief](#) involves taking a claim that most people believe that X is true to be evidence for X being true.

Examples of Appeal to Consequences of a Belief

1. "God must exist! If God did not exist, then all basis for morality would be lost and the world would be a horrible place!"
 2. "It can never happen to me. If I believed it could, I could never sleep soundly at night."
 3. "I don't think that there will be a nuclear war. If I believed that, I wouldn't be able to get up in the morning. I mean, how depressing."
 4. "I acknowledge that I have no argument for the existence of God. However, I have a great desire for God to exist and for there to be an afterlife. Therefore I accept that God exists."
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Fallacy: Appeal to Emotion

Description of Appeal to Emotion

An Appeal to Emotion is a fallacy with the following structure:

1. Favorable emotions are associated with X.
2. Therefore, X is true.

This fallacy is committed when someone manipulates peoples' emotions in order to get them to accept a claim as being true. More formally, this sort of "reasoning" involves the substitution of various means of producing strong emotions in place of evidence for a claim. If the favorable emotions associated with X influence the person to accept X as true because they "feel good about X," then he has fallen prey to the fallacy.

This sort of "reasoning" is very common in politics and it serves as the basis for a large portion of modern advertising. Most political speeches are aimed at generating feelings in people so that these feelings will get them to vote or act a certain way. In the case of advertising, the commercials are aimed at evoking emotions that will influence people to buy certain products. In most cases, such speeches and commercials are notoriously free of real evidence.

This sort of "reasoning" is quite evidently fallacious. It is fallacious because using various tactics to incite emotions in people does not serve as evidence for a claim. For example, if a person were able to inspire in a person an incredible hatred of the claim that $1+1 = 2$ and then inspired the person to love the claim that $1+1 = 3$, it would hardly follow that the claim that $1+1 = 3$ would be adequately supported.

It should be noted that in many cases it is not particularly obvious that the person committing the fallacy is attempting to support a claim. In many cases, the user of the fallacy will appear to be attempting to move people to take an action, such as buying a product or fighting in a war. However, it is possible to determine what sort of claim the person is actually attempting to support. In such cases one needs to ask "what sort of claim is this person attempting to get people to accept and act on?" Determining this claim (or claims) might take some work. However, in many cases it will be quite evident. For example, if a political leader is attempting to convince her followers to participate in certain acts of violence by the use of a hate speech, then her claim would be "you should participate in these acts of violence." In this case, the "evidence" would be the hatred evoked in the followers. This hatred would serve to make them favorable inclined towards the claim that they should engage in the acts of violence. As another example, a beer commercial might show happy, scantily clad men and women prancing about a beach, guzzling beer. In this case the claim would be "you should buy this beer." The "evidence" would be the excitement evoked by seeing the beautiful people guzzling the beer.

This fallacy is actually an extremely effective persuasive device. As many people have argued, peoples' emotions often carry much more force than their reason. Logical argumentation is often difficult and time consuming and it rarely has the power to spurn people to action. It is the power of this fallacy that explains its great popularity and wide usage. However, it is still a fallacy.

In all fairness it must be noted that the use of tactics to inspire emotions is an important skill. Without an appeal to peoples' emotions, it is often difficult to get them to take action or to perform at their best. For example, no good coach presents her team with syllogisms before the big game. Instead she inspires them with emotional terms and attempts to "fire" them up. There is nothing inherently wrong with this. However, it is not any acceptable form of argumentation. As long as one is able to clearly distinguish between what inspires emotions and what justifies a claim, one is unlikely to fall prey to this fallacy.

As a final point, in many cases it will be difficult to distinguish an Appeal to Emotion from some other fallacies and in many cases multiple fallacies may be committed. For example, many [Ad Hominems](#) will be very similar to Appeals to Emotion and, in some cases, both fallacies will be committed. As an example, a leader might attempt to invoke hatred of a person to inspire his followers to accept that they should reject her claims. The same attack could function as an Appeal to Emotion and a [Personal Attack](#). In the first case, the attack would be aimed at making the followers feel very favorable about

rejecting her claims. In the second case, the attack would be aimed at making the followers reject the person's claims because of some perceived (or imagined) defect in her character.

This fallacy is related to the [Appeal to Popularity](#) fallacy. Despite the differences between these two fallacies, they are both united by the fact that they involve appeals to emotions. In both cases the fallacies aim at getting people to accept claims based on how they or others feel about the claims and not based on evidence for the claims.

Another way to look at these two fallacies is as follows

[Appeal to Popularity](#)

1. Most people approve of X.
2. So, I should approve of X, too.
3. Since I approve of X, X must be true.

Appeal to Emotion

1. I approve of X.
2. Therefore, X is true.

On this view, in an [Appeal to Popularity](#) the claim is accepted because most people approve of the claim. In the case of an Appeal to Emotion the claim is accepted because the individual approves of the claim because of the emotion of approval he feels in regards to the claim.

Examples of Appeal to Emotion

1. The new PowerTangerine computer gives you the power you need. If you buy one, people will envy your power. They will look up to you and wish they were just like you. You will know the true joy of power. TangerinePower.
 2. The new UltraSkinny diet will make you feel great. No longer be troubled by your weight. Enjoy the admiring stares of the opposite sex. Revel in your new freedom from fat. You will know true happiness if you try our diet!
 3. Bill goes to hear a politician speak. The politician tells the crowd about the evils of the government and the need to throw out the people who are currently in office. After hearing the speech, Bill is full of hatred for the current politicians. Because of this, he feels good about getting rid of the old politicians and accepts that it is the right thing to do because of how he feels.
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Fallacy: Appeal to Fear

Also Known as: Scare Tactics, Appeal to Force, Ad Baculum

Description of Appeal to Fear

The Appeal to Fear is a fallacy with the following pattern:

1. Y is presented (a claim that is intended to produce fear).
2. Therefore claim X is true (a claim that is generally, but need not be, related to Y in some manner).

This line of "reasoning" is fallacious because creating fear in people does not constitute evidence for a claim.

It is important to distinguish between a rational reason to believe (RRB) (evidence) and a prudential reason to believe (PRB) (motivation). A RRB is evidence that objectively and logically supports the claim. A PRB is a reason to accept the belief because of some external factor (such as fear, a threat, or a benefit or harm that may stem from the belief) that is relevant to what a person values but is not relevant to the truth or falsity of the claim. For example, it might be prudent to not fail the son of your department chairperson because you fear he will make life tough for you. However, this does not provide evidence for the claim that the son deserves to pass the class.

Examples of Appeal to Fear

1. "You know, Professor Smith, I really need to get an A in this class. I'd like to stop by during your office hours later to discuss my grade. I'll be in your building anyways, visiting my father. He's your dean, by the way. I'll see you later."
 2. "I don't think a Red Ryder BB rifle would make a good present for you. They are very dangerous and you'll put your eye out. Now, don't you agree that you should think of another gift idea?"
 3. "You must believe that God exists. After all, if you do not accept the existence of God, then you will face the horrors of hell."
 4. "You shouldn't say such things against multiculturalism! If the chair heard what you were saying, you would never receive tenure. So, you had just better learn to accept that it is simply wrong to speak out against it."
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Fallacy: Appeal to Flattery

Also Known as: Apple Polishing, various "colorful" expressions.

Description of Appeal to Flattery

An Appeal to Flattery is a fallacy of the following form:

1. Person A is flattered by person B.
2. Person B makes claim X.
3. Therefore X is true.

The basic idea behind this fallacy is that flattery is presented in the place of evidence for accepting a claim. this sort of "reasoning" is fallacious because flattery is not, in fact, evidence for a claim. This is especially clear in a case like this: "My Bill, that is a really nice tie. By the way, it is quite clear that one plus one is equal to forty three."

Examples of Appeal to Flattery

1. "Might I say that this is the best philosophy class I've ever taken. By the way, about those two points I need to get an A..."
 2. "That was a wonderful joke about AIDS boss, and I agree with you that the damn liberals are wrecking the country. Now about my raise..."
 3. "That was a singularly brilliant idea. I have never seen such a clear and eloquent defense of Plato's position. If you do not mind, I'll base my paper on it. Provided that you allow me a little extra time past the deadline to work on it."
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Fallacy: Appeal to Novelty

Also Known as: Appeal to the New, Newer is Better, Novelty.

Description of Appeal to Novelty

Appeal to Novelty is a fallacy that occurs when it is assumed that something is better or correct simply because it is new. This sort of "reasoning" has the following form:

1. X is new.
2. Therefore X is correct or better.

This sort of "reasoning" is fallacious because the novelty or newness of something does not automatically make it correct or better than something older. This is made quite obvious by the following example: Joe has proposed that $1+1$ should now be equal to 3. When asked why people should accept this, he says that he just came up with the idea. Since it is newer than the idea that $1+1=2$, it must be better.

This sort of "reasoning" is appealing for many reasons. First, "western culture" includes a very powerful commitment to the notion that new things must be better than old things. Second, the notion of progress (which seems to have come, in part, from the notion of evolution) implies that newer things will be superior to older things. Third, media advertising often sends the message that newer must be better. Because of these three factors (and others) people often accept that a new thing (idea, product, concept, etc.) must be better because it is new. Hence, Novelty is a somewhat common fallacy, especially in advertising.

It should not be assumed that old things must be better than new things (see the fallacy Appeal to Tradition) anymore than it should be assumed that new things are better than old things. The age of thing does not, in general, have any bearing on its quality or correctness (in this context).

Obviously, age does have a bearing in some contexts. For example, if a person concluded that his day old milk was better than his two-month old milk, he would not be committing an Appeal to Novelty. This is because, in such cases the newness of the thing is relevant to its quality. Thus, the fallacy is committed only when the newness is not, in and of itself, relevant to the claim.

Examples of Appeal to Novelty

1. A made up advertisement.

The Sadisike 900 pump-up glow shoe. It's better because it's new.

2. Two business people are having a discussion.

James: "So, what is this new plan?"

Biff: "Well, the latest thing in marketing techniques is the GK method. It is the latest thing out of the think tank. It is so new that the ink on the reports is still drying."

James: "Well, our old marketing method has been quite effective. I don't like the idea of jumping to a new method without a good reason."

Biff: "Well, we know that we have to stay on the cutting edge. That means new ideas and new techniques have to be used. The GK method is new, so it will do better than that old, dusty method."

3. A professor is lecturing to his class.

Prof: "So you can see that a new and better morality is sweeping the nation. No longer are people with alternative lifestyles ashamed. No longer are people caught up in the outmoded moralities of the past."

Student: "Well, what about the ideas of the the great thinkers of the past? Don't they have some valid points?"

Prof: "A good question. The answer is that they had some valid points in their own, barbaric times. But those are old, moldy moralities from a time long gone. Now is a time for new moralities. Progress and all that, you know."

Student: "So would you say that the new moralities are better because they are newer?"

Prof: "Exactly. Just as the dinosaurs died off to make way for new animals, the old ideas have to give way for the new ones. And just as humans are better than dinosaurs, the new ideas are better than the old. So newer is literally better."

Student: "I see."

Fallacy: Appeal to Pity

Also known as: Ad Misericordiam

Description of Appeal to Pity

An Appeal to Pity is a fallacy in which a person substitutes a claim intended to create pity for evidence in an argument. The form of the "argument" is as follows:

1. P is presented, with the intent to create pity.
2. Therefore claim C is true.

This line of "reasoning" is fallacious because pity does not serve as evidence for a claim. This is extremely clear in the following case: "You must accept that $1+1=46$, after all I'm dying..." While you may pity me because I am dying, it would hardly make my claim true.

This fallacy differs from the [Appeal to the Consequences of a Belief](#) (ACB). In the ACB fallacy, a person is using the effects of a belief as a substitute for evidence. In the Appeal to Pity, it is the feelings of pity or sympathy that are substituted for evidence.

It must be noted that there are cases in which claims that actually serve as evidence also evoke a feeling of pity. In such cases, the feeling of pity is still not evidence. The following is an example of a case in which a claim evokes pity and also serves as legitimate evidence:

Professor: "You missed the midterm, Bill."

Bill: "I know. I think you should let me take the makeup."

Professor: "Why?"

Bill: "I was hit by a truck on the way to the midterm. Since I had to go to the emergency room with a broken leg, I think I am entitled to a makeup."

Professor: "I'm sorry about the leg, Bill. Of course you can make it up."

The above example does not involve a fallacy. While the professor does feel sorry for Bill, she is justified in accepting Bill's claim that he deserves a makeup. After all getting run over by a truck would be a legitimate excuse for missing a test.

Examples of Appeal to Pity

1. Jill: "He'd be a terrible coach for the team."
Bill: "He had his heart set on the job, and it would break if he didn't get it."
Jill: "I guess he'll do an adequate job."
 2. "I'm positive that my work will meet your requirements. I really need the job since my grandmother is sick"
 3. "I should receive an 'A' in this class. After all, if I don't get an 'A' I won't get the fellowship that I want."
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Fallacy: Appeal to Popularity

Also Known as: Ad Populum

Description of Appeal to Popularity

The Appeal to Popularity has the following form:

1. Most people approve of X (have favorable emotions towards X).
2. Therefore X is true.

The basic idea is that a claim is accepted as being true simply because most people are favorably inclined towards the claim. More formally, the fact that most people have favorable emotions associated with the claim is substituted in place of actual evidence for the claim. A person falls prey to this fallacy if he accepts a claim as being true simply because most other people approve of the claim.

It is clearly fallacious to accept the approval of the majority as evidence for a claim. For example, suppose that a skilled speaker managed to get most people to absolutely love the claim that $1 + 1 = 3$. It would still not be rational to accept this claim simply because most people approved of it. After all, mere approval is no substitute for a mathematical proof. At one time people approved of claims such as "the world is flat", "humans cannot survive at speeds greater than 25 miles per hour", "the sun revolves around the earth" but all these claims turned out to be false.

This sort of "reasoning" is quite common and can be quite an effective persuasive device. Since most humans tend to conform with the views of the majority, convincing a person that the majority approves of a claim is often an effective way to get him to accept it. Advertisers often use this tactic when they attempt to sell products by claiming that everyone uses and loves their products. In such cases they hope that people will accept the (purported) approval of others as a good reason to buy the product.

This fallacy is vaguely similar to such fallacies as [Appeal to Belief](#) and [Appeal to Common Practice](#). However, in the case of an Ad Populum the appeal is to the fact that most people approve of a claim. In the case of an [Appeal to Belief](#), the appeal is to the fact that most people believe a claim. In the case of an [Appeal to Common Practice](#), the appeal is to the fact that many people take the action in question.

This fallacy is closely related to the [Appeal to Emotion](#) fallacy, as discussed in the entry for that fallacy.

Examples of Appeal to Popularity

1. "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."
 2. "I read the other day that most people really like the new gun control laws. I was sort of suspicious of them, but I guess if most people like them, then they must be okay."
 3. Jill and Jane have some concerns that the rules their sorority has set are racist in character. Since Jill is a decent person, she brings her concerns up in the next meeting. The president of the sorority assures her that there is nothing wrong with the rules, since the majority of the sisters like them. Jane accepts this ruling but Jill decides to leave the sorority.
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Fallacy: Appeal to Ridicule

Also Known as: Appeal to Mockery, The Horse Laugh.

Description of Appeal to Ridicule

The Appeal to Ridicule is a fallacy in which ridicule or mockery is substituted for evidence in an "argument." This line of "reasoning" has the following form:

1. X, which is some form of ridicule is presented (typically directed at the claim).
2. Therefore claim C is false.

This sort of "reasoning" is fallacious because mocking a claim does not show that it is false. This is especially clear in the following example: "1+1=2! That's the most ridiculous thing I have ever heard!"

It should be noted that showing that a claim is ridiculous through the use of legitimate methods (such as a non fallacious argument) can make it reasonable to reject the claim. One form of this line of reasoning is known as a "reduction ad absurdum" ("reducing to absurdity"). In this sort of argument, the idea is to show that a contradiction (a statement that must be false) or an absurd result follows from a claim. For example: "Bill claims that a member of a minority group cannot be a racist. However, this is absurd. Think about this: white males are a minority in the world. Given Bill's claim, it would follow that no white males could be racists. Hence, the Klan, Nazis, and white supremacist are not racist organizations."

Since the claim that the Klan, Nazis, and white supremacist are not racist organizations is clearly absurd, it can be concluded that the claim that a member of a minority cannot be a racist is false.

Examples of Appeal to Ridicule

1. "Sure my worthy opponent claims that we should lower tuition, but that is just laughable."
 2. "Support the ERA? Sure, when the women start paying for the drinks! Hah! Hah!"
 3. "Those wacky conservatives! They think a strong military is the key to peace!"
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Fallacy: Appeal to Spite

Description of Appeal to Spite

The Appeal to Spite Fallacy is a fallacy in which spite is substituted for evidence when an "argument" is made against a claim. This line of "reasoning" has the following form:

1. Claim X is presented with the intent of generating spite.
2. Therefore claim C is false (or true)

This sort of "reasoning" is fallacious because a feeling of spite does not count as evidence for or against a claim. This is quite clear in the following case: "Bill claims that the earth revolves around the sun. But remember that dirty trick he pulled on you last week. Now, doesn't my claim that the sun revolves around the earth make sense to you?"

Of course, there are cases in which a claim that evokes a feeling of spite or malice can serve as legitimate evidence. However, it should be noted that the actual feelings of malice or spite are not evidence. The following is an example of such a situation:

Jill: "I think I'll vote for Jane to be treasurer of NOW."

Vicki: "Remember the time that your purse vanished at a meeting last year?"

Jill: "Yes."

Vicki: "Well, I just found out that she stole your purse and stole some other stuff from people."

Jill: "I'm not voting for her!"

In this case, Jill has a good reason not to vote for Jane. Since a treasurer should be honest, a known thief would be a bad choice. As long as Jill concludes that she should vote against Jane because she is a thief and not just out of spite, her reasoning would not be fallacious.

Examples of Appeal to Spite

1. Bill: "I think that Jane did a great job this year. I'm going to nominate her for the award."
Dave: "Have you forgotten last year? Remember that she didn't nominate you last year."
Bill: "You're right. I'm not going to nominate her."
 2. Jill: "I think Jane's idea is a really good one and will really save a lot of money for the department."
Bill: "Maybe. Remember how she showed that your paper had a fatal flaw when you read it at the convention last year..."
Jill: "I had just about forgotten about that! I think I'll go with your idea instead."
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Fallacy: Appeal to Tradition

Also Known as: Appeal to the Old, Old Ways are Best, Fallacious Appeal to the Past, Appeal to Age

Description of Appeal to Tradition

Appeal to Tradition is a fallacy that occurs when it is assumed that something is better or correct simply because it is older, traditional, or "always has been done." This sort of "reasoning" has the following form:

1. X is old or traditional
2. Therefore X is correct or better.

This sort of "reasoning" is fallacious because the age of something does not automatically make it correct or better than something newer. This is made quite obvious by the following example: The theory that witches and demons cause disease is far older than the theory that microorganisms cause diseases. Therefore, the theory about witches and demons must be true.

This sort of "reasoning" is appealing for a variety of reasons. First, people often prefer to stick with what is older or traditional. This is a fairly common psychological characteristic of people which may stem from the fact that people feel more comfortable about what has been around longer. Second, sticking with things that are older or traditional is often easier than testing new things. Hence, people often prefer older and traditional things out of laziness. Hence, Appeal to Tradition is a somewhat common fallacy.

It should not be assumed that new things must be better than old things (see the fallacy Appeal to Novelty) any more than it should be assumed that old things are better than new things. The age of something does not, in general, have any bearing on its quality or correctness (in this context). In the case of tradition, assuming that something is correct just because it is considered a tradition is poor reasoning. For example, if the belief that $1+1 = 56$ were a tradition of a group of people it would hardly follow that it is true.

Obviously, age does have a bearing in some contexts. For example, if a person concluded that aged wine would be better than brand new wine, he would not be committing an Appeal to Tradition. This is because, in such cases the age of the thing is relevant to its quality. Thus, the fallacy is committed only when the age is not, in and of itself, relevant to the claim.

One final issue that must be considered is the "test of time." In some cases people might be assuming that because something has lasted as a tradition or has been around a long time that it is true because it has "passed the test of time." If a person assumes that something must be correct or true simply because it has persisted a long time, then he has committed an Appeal to Tradition. After all, as history has shown people can persist in accepting false claims for centuries.

However, if a person argues that the claim or thing in question has successfully stood up to challenges and tests for a long period of time then they would not be committing a fallacy. In such cases the claim would be backed by evidence. As an example, the theory that matter is made of subatomic particles has survived numerous tests and challenges over the years so there is a weight of evidence in its favor. The claim is reasonable to accept because of the weight of this evidence and not because the claim is old. Thus, a claim's surviving legitimate challenges and passing valid tests for a long period of time can justify the acceptance of a claim. But mere age or persistence does not warrant accepting a claim.

Examples of Appeal to Tradition

1. Sure I believe in God. People have believed in God for thousands of years so it seems clear that God must exist. After all, why else would the belief last so long?
2. Gunthar is the father of Connan. They live on a small island and in their culture women are treated as property to be exchanged at will by men.

Connan: "You know father, when I was going to school in the United States I saw that American women are not treated as property. In fact, I read a book by this person named Mill in which he argued for women's rights."

Gunthar: "So, what is your point son?"

Connan: "Well, I think that it might be wrong to trade my sisters for cattle. They are human beings and should have a right to be masters of their own fate."

Gunthar: "What a strange and new-fangled notion you picked up in America. That country must be even more barbaric than I imagined. Now think about this son. We have been trading women for cattle for as long as our people have lived on this island. It is a tradition that goes back into the mists of time. "

Connan: "But I still think there is something wrong with it."

Gunthar: "Nonsense my boy. A tradition this old must be endorsed by the gods and must be right."

3. Of course this mode of government is the best. We have had this government for over 200 years and no one has talked about changing it in all that time. So, it has got to be good.
4. A reporter is interviewing the head of a family that has been involved with a feud with another family.

Reporter: "Mr. Hatfield, why are you still fighting it out with the Mcoys?"

Hatfield: "Well you see young man, my father feuded with the Mcoys and his father feuded with them and so did my great grandfather."

Reporter: "But why? What started all this?"

Hatfield: "I don't rightly know. I'm sure it was the Mcoys who started it all, though."

Reporter: "If you don't know why you're fighting, why don't you just stop?"

Hatfield: "Stop? What are you crazy? This feud has been going on for generations so I'm sure there is a darn good reason why it started. So I aim to keep it going. It has got to be the right thing to do. Hand me my shooting iron boy, I see one of those Mcoy skunks sneaking in the cornfield."

Fallacy: Bandwagon

Also Known as: Peer Pressure.

Description of Bandwagon

The Bandwagon is a fallacy in which a threat of rejection by one's peers (or peer pressure) is substituted for evidence in an "argument." This line of "reasoning" has the following form:

1. Person P is pressured by his/her peers or threatened with rejection.
2. Therefore person P's claim X is false.

This line of "reasoning" is fallacious because peer pressure and threat of rejection do not constitute evidence for rejecting a claim. This is especially clear in the following example:

Joe: "Bill, I know you think that $1+1=2$. But we don't accept that sort of thing in our group. "

Bill: "I was just joking. Of course I don't believe that."

It is clear that the pressure from Bill's group has no bearing on the truth of the claim that $1+1=2$.

It should be noted that loyalty to a group and the need to belong can give people very strong reasons to conform to the views and positions of those groups. Further, from a practical standpoint we must often compromise our beliefs in order to belong to groups. However, this feeling of loyalty or the need to belong simply do not constitute evidence for a claim.

Examples of Bandwagon

1. Bill says that he likes the idea that people should work for their welfare when they can. His friends laugh at him, accuse him of fascist leanings, and threaten to ostracize him from their group. He decides to recant and abandon his position to avoid rejection.
 2. Bill: "I like classical music and I think it is of higher quality than most modern music."
Jill: "That stuff is for old people."
Dave: "Yeah, only real woozies listen to that crap. Besides, Anthrax rules! It Rules!"
Bill: "Well, I don't really like it that much. Anthrax is much better."
 3. Bill thinks that welfare is needed in some cases. His friends in the Young Republicans taunt him every time he makes his views known. He accepts their views in order to avoid rejection.
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Fallacy: Begging the Question

Also Known as: Circular Reasoning, Reasoning in a Circle, Petitio Principii.

Description of Begging the Question

Begging the Question is a fallacy in which the premises include the claim that the conclusion is true or (directly or indirectly) assume that the conclusion is true. This sort of "reasoning" typically has the following form.

1. Premises in which the truth of the conclusion is claimed or the truth of the conclusion is assumed (either directly or indirectly).
2. Claim C (the conclusion) is true.

This sort of "reasoning" is fallacious because simply assuming that the conclusion is true (directly or indirectly) in the premises does not constitute evidence for that conclusion. Obviously, simply assuming a claim is true does not serve as evidence for that claim. This is especially clear in particularly blatant cases: "X is true. The evidence for this claim is that X is true."

Some cases of question begging are fairly blatant, while others can be extremely subtle.

Examples of Begging the Question

1. Bill: "God must exist."
Jill: "How do you know."
Bill: "Because the Bible says so."
Jill: "Why should I believe the Bible?"
Bill: "Because the Bible was written by God."
 2. "If such actions were not illegal, then they would not be prohibited by the law."
 3. "The belief in God is universal. After all, everyone believes in God."
 4. Interviewer: "Your resume looks impressive but I need another reference."
Bill: "Jill can give me a good reference."
Interviewer: "Good. But how do I know that Jill is trustworthy?"
Bill: "Certainly. I can vouch for her."
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Fallacy: Biased Sample

Also Known as: Biased Statistics, Loaded Sample, Prejudiced Statistics, Prejudiced Sample, Loaded Statistics, Biased Induction, Biased Generalization

Description of Biased Sample

This fallacy is committed when a person draws a conclusion about a population based on a sample that is biased or prejudiced in some manner. It has the following form:

1. Sample S, which is biased, is taken from population P.
2. Conclusion C is drawn about Population P based on S.

The person committing the fallacy is misusing the following type of reasoning, which is known variously as Inductive Generalization, Generalization, and Statistical Generalization:

1. X% of all observed A's are B's.
2. Therefore X% of all A's are Bs.

The fallacy is committed when the sample of A's is likely to be biased in some manner. A sample is biased or loaded when the method used to take the sample is likely to result in a sample that does not adequately represent the population from which it is drawn.

Biased samples are generally not very reliable. As a blatant case, imagine that a person is taking a sample from a truckload of small colored balls, some of which are metal and some of which are plastic. If he used a magnet to select his sample, then his sample would include a disproportionate number of metal balls (after all, the sample will probably be made up entirely of the metal balls). In this case, any conclusions he might draw about the whole population of balls would be unreliable since he would have few or no plastic balls in the sample.

The general idea is that biased samples are less likely to contain numbers proportional to the whole population. For example, if a person wants to find out what most Americans thought about gun control, a poll taken at an NRA meeting would be a biased sample.

Since the Biased Sample fallacy is committed when the sample (the observed instances) is biased or loaded, it is important to have samples that are not biased making a generalization. The best way to do this is to take samples in ways that avoid bias. There are, in general, three types of samples that are aimed at avoiding bias. The general idea is that these methods (when used properly) will result in a sample that matches the whole population fairly closely. The three types of samples are as follows

1. **Random Sample:** This is a sample that is taken in such a way that nothing but chance determines which members of the population are selected for the sample. Ideally, any individual member of the population has the same chance as being selected as any other. This type of sample avoids being biased because a biased sample is one that is taken in such a way that some members of the population have a significantly greater chance of being selected for the sample than other members. Unfortunately, creating an ideal random sample is often very difficult.
2. **Stratified Sample:** This is a sample that is taken by using the following steps: 1) The relevant strata (population subgroups) are identified, 2) The number of members in each stratum is determined and 3) A random sample is taken from each stratum in exact proportion to its size. This method is obviously most useful when dealing with stratified populations. For example, a person's income often influences how she votes, so when conducting a presidential poll it would be a good idea to take a stratified sample using economic classes as the basis for determining the strata. This method avoids loaded samples by (ideally) ensuring that each stratum of the population is adequately represented.
3. **Time Lapse Sample:** This type of sample is taken by taking a stratified or random sample and then taking at least one more sample with a significant lapse of time between them. After the two samples are taken, they can be compared for changes. This method of sample taking is very important when making predictions. A prediction based on only one sample is likely to be a [Hasty Generalization](#) (because the sample is likely to be too small to cover past, present and

future populations) or a Biased Sample (because the sample will only include instances from one time period).

People often commit Biased Sample because of bias or prejudice. For example, a person might intentionally or unintentionally seek out people or events that support his bias. As an example, a person who is pushing a particular scientific theory might tend to gather samples that are biased in favor of that theory.

People also commonly commit this fallacy because of laziness or sloppiness. It is very easy to simply take a sample from what happens to be easily available rather than taking the time and effort to generate an adequate sample and draw a justified conclusion.

It is important to keep in mind that bias is relative to the purpose of the sample. For example, if Bill wanted to know what NRA members thought about a gun control law, then taking a sample at a NRA meeting would not be biased. However, if Bill wanted to determine what Americans in general thought about the law, then a sample taken at an NRA meeting would be biased.

Examples of Biased Sample

1. Bill is assigned by his editor to determine what most Americans think about a new law that will place a federal tax on all modems and computers purchased. The revenues from the tax will be used to enforce new online decency laws. Bill, being technically inclined, decides to use an email poll. In his poll, 95% of those surveyed opposed the tax. Bill was quite surprised when 65% of all Americans voted for the taxes.
 2. The United Pacifists of America decide to run a poll to determine what Americans think about guns and gun control. Jane is assigned the task of setting up the study. To save mailing costs, she includes the survey form in the group's newsletter mailing. She is very pleased to find out that 95% of those surveyed favor gun control laws and she tells her friends that the vast majority of Americans favor gun control laws.
 3. Large scale polls were taken in Florida, California, and Maine and it was found that an average of 55% of those polled spent at least fourteen days a year near the ocean. So, it can be safely concluded that 55% of all Americans spend at least fourteen days near the ocean each year.
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Fallacy: Burden of Proof

Includes: Appeal to Ignorance ("Ad Ignorantiam")

Description of Burden of Proof

Burden of Proof is a fallacy in which the burden of proof is placed on the wrong side. Another version occurs when a lack of evidence for side A is taken to be evidence for side B in cases in which the burden of proof actually rests on side B. A common name for this is an Appeal to Ignorance. This sort of reasoning typically has the following form:

1. Claim X is presented by side A and the burden of proof actually rests on side B.
2. Side B claims that X is false because there is no proof for X.

In many situations, one side has the burden of proof resting on it. This side is obligated to provide evidence for its position. The claim of the other side, the one that does not bear the burden of proof, is assumed to be true unless proven otherwise. The difficulty in such cases is determining which side, if any, the burden of proof rests on. In many cases, settling this issue can be a matter of significant debate. In some cases the burden of proof is set by the situation. For example, in American law a person is assumed to be innocent until proven guilty (hence the burden of proof is on the prosecution). As another example, in debate the burden of proof is placed on the affirmative team. As a final example, in most cases the burden of proof rests on those who claim something exists (such as Bigfoot, psychic powers, universals, and sense data).

Examples of Burden of Proof

1. Bill: "I think that we should invest more money in expanding the interstate system."
Jill: "I think that would be a bad idea, considering the state of the treasury."
Bill: "How can anyone be against highway improvements?"
 2. Bill: "I think that some people have psychic powers."
Jill: "What is your proof?"
Bill: "No one has been able to prove that people do not have psychic powers."
 3. "You cannot prove that God does not exist, so He does."
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Fallacy: Circumstantial Ad Hominem

Description of Circumstantial Ad Hominem

A Circumstantial ad Hominem is a fallacy in which one attempts to attack a claim by asserting that the person making the claim is making it simply out of self interest. In some cases, this fallacy involves substituting an attack on a person's circumstances (such as the person's religion, political affiliation, ethnic background, etc.). The fallacy has the following forms:

1. Person A makes claim X.
2. Person B asserts that A makes claim X because it is in A's interest to claim X.
3. Therefore claim X is false.

1. Person A makes claim X.
2. Person B makes an attack on A's circumstances.
3. Therefore X is false.

A Circumstantial ad Hominem is a fallacy because a person's interests and circumstances have no bearing on the truth or falsity of the claim being made. While a person's interests will provide them with motives to support certain claims, the claims stand or fall on their own. It is also the case that a person's circumstances (religion, political affiliation, etc.) do not affect the truth or falsity of the claim. This is made quite clear by the following example: "Bill claims that $1+1=2$. But he is a Republican, so his claim is false."

There are times when it is prudent to be suspicious of a person's claims, such as when it is evident that the claims are being biased by the person's interests. For example, if a tobacco company representative claims that tobacco does not cause cancer, it would be prudent to not simply accept the claim. This is because the person has a motivation to make the claim, whether it is true or not. However, the mere fact that the person has a motivation to make the claim does not make it false. For example, suppose a parent tells her son that sticking a fork in a light socket would be dangerous. Simply because she has a motivation to say this obviously does not make her claim false.

Examples of Circumstantial Ad Hominem

1. "She asserts that we need more military spending, but that is false, since she is only saying it because she is a Republican."
 2. "I think that we should reject what Father Jones has to say about the ethical issues of abortion because he is a Catholic priest. After all, Father Jones is required to hold such views."
 3. "Of course the Senator from Maine opposes a reduction in naval spending. After all, Bath Ironworks, which produces warships, is in Maine."
 4. "Bill claims that tax breaks for corporations increases development. Of course, Bill is the CEO of a corporation."
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Fallacy: Composition

Description of Composition

The fallacy of Composition is committed when a conclusion is drawn about a whole based on the features of its constituents when, in fact, no justification provided for the inference. There are actually two types of this fallacy, both of which are known by the same name (because of the high degree of similarity).

The first type of fallacy of Composition arises when a person reasons from the characteristics of individual members of a class or group to a conclusion regarding the characteristics of the entire class or group (taken as a whole). More formally, the "reasoning" would look something like this.

1. Individual F things have characteristics A, B, C, etc.
2. Therefore, the (whole) class of F things has characteristics A, B, C, etc.

This line of reasoning is fallacious because the mere fact that individuals have certain characteristics does not, in itself, guarantee that the class (taken as a whole) has those characteristics.

It is important to note that drawing an inference about the characteristics of a class based on the characteristics of its individual members is not always fallacious. In some cases, sufficient justification can be provided to warrant the conclusion. For example, it is true that an individual rich person has more wealth than an individual poor person. In some nations (such as the US) it is true that the class of wealthy people has more wealth as a whole than does the class of poor people. In this case, the evidence used would warrant the inference and the fallacy of Composition would not be committed.

The second type of fallacy of Composition is committed when it is concluded that what is true of the parts of a whole must be true of the whole without there being adequate justification for the claim. More formally, the line of "reasoning" would be as follows:

1. The parts of the whole X have characteristics A, B, C, etc.
2. Therefore the whole X must have characteristics A, B, C.

That this sort of reasoning is fallacious because it cannot be inferred that simply because the parts of a complex whole have (or lack) certain properties that the whole that they are parts of has those properties. This is especially clear in math: The numbers 1 and 3 are both odd. 1 and 3 are parts of 4. Therefore, the number 4 is odd.

It must be noted that reasoning from the properties of the parts to the properties of the whole is not always fallacious. If there is justification for the inference from parts to whole, then the reasoning is not fallacious. For example, if every part of the human body is made of matter, then it would not be an error in reasoning to conclude that the whole human body is made of matter. Similarly, if every part of a structure is made of brick, there is no fallacy committed when one concludes that the whole structure is made of brick.

Examples of Composition

1. A main battle tank uses more fuel than a car. Therefore, the main battle tanks use up more of the available fuel in the world than do all the cars.
2. A tiger eats more food than a human being. Therefore, tigers, as a group, eat more food than do all the humans on the earth.
3. Atoms are colorless. Cats are made of atoms, so cats are colorless.
4. "Every player on the team is a superstar and a great player, so the team is a great team." This is fallacious since the superstars might not be able to play together very well and hence they could be a lousy team.
5. "Each part of the show, from the special effects to the acting is a masterpiece. So, the whole show is a masterpiece." This is fallacious since a show could have great acting, great special effects and such, yet still fail to "come together" to make a masterpiece.
6. "Come on, you like beef, potatoes, and green beans, so you will like this beef, potato, and green bean casserole." This is fallacious for the same reason that the following is fallacious:

"You like eggs, ice cream, pizza, cake, fish, jello, chicken, taco sauce, soda, oranges, milk, egg rolls, and yogurt so you must like this yummy dish made out of all of them."

7. Sodium and Chloride are both dangerous to humans. Therefore any combination of sodium and chloride will be dangerous to humans.
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Fallacy: Confusing Cause and Effect

Also Known as: [Questionable Cause](#)

Description of Confusing Cause and Effect

Confusing Cause and Effect is a fallacy that has the following general form:

1. A and B regularly occur together.
2. Therefore A is the cause of B.

This fallacy requires that there is not, in fact, a common cause that actually causes both A and B.

This fallacy is committed when a person assumes that one event must cause another just because the events occur together. More formally, this fallacy involves drawing the conclusion that A is the cause of B simply because A and B are in regular conjunction (and there is not a common cause that is actually the cause of A and B). The mistake being made is that the causal conclusion is being drawn without adequate justification.

In some cases it will be evident that the fallacy is being committed. For example, a person might claim that an illness was caused by a person getting a fever. In this case, it would be quite clear that the fever was caused by illness and not the other way around. In other cases, the fallacy is not always evident. One factor that makes causal reasoning quite difficult is that it is not always evident what is the cause and what is the effect. For example, a problem child might be the cause of the parents being short tempered or the short temper of the parents might be the cause of the child being problematic. The difficulty is increased by the fact that some situations might involve feedback. For example, the parents' temper might cause the child to become problematic and the child's behavior could worsen the parents' temper. In such cases it could be rather difficult to sort out what caused what in the first place.

In order to determine that the fallacy has been committed, it must be shown that the causal conclusion has not been adequately supported and that the person committing the fallacy has confused the actual cause with the effect. Showing that the fallacy has been committed will typically involve determining the actual cause and the actual effect. In some cases, as noted above, this can be quite easy. In other cases it will be difficult. In some cases, it might be almost impossible. Another thing that makes causal reasoning difficult is that people often have very different conceptions of cause and, in some cases, the issues are clouded by emotions and ideologies. For example, people often claim violence on TV and in movies must be censored because it causes people to like violence. Other people claim that there is violence on TV and in movies because people like violence. In this case, it is not obvious what the cause really is and the issue is clouded by the fact that emotions often run high on this issue.

While causal reasoning can be difficult, many errors can be avoided with due care and careful testing procedures. This is due to the fact that the fallacy arises because the conclusion is drawn without due care. One way to avoid the fallacy is to pay careful attention to the temporal sequence of events. Since (outside of Star Trek), effects do not generally precede their causes, if A occurs after B, then A cannot be the cause of B. However, these methods go beyond the scope of this program.

All causal fallacies involve an error in causal reasoning. However, this fallacy differs from the other causal fallacies in terms of the error in reasoning being made. In the case of a [Post Hoc](#) fallacy, the error is that a person is accepting that A is the cause of B simply because A occurs before B. In the case of the Fallacy of [Ignoring a Common Cause](#) A is taken to be the cause of B when there is, in fact, a third factor that is the cause of both A and B. For more information, see the relevant entries in this program.

Examples of Confusing Cause and Effect

1. Bill and Joe are having a debate about music and moral decay:
Bill: "It seems clear to me that this new music is causing the youth to become corrupt."
Joe: "What do you mean?"

Bill: "This rap stuff is always telling the kids to kill cops, do drugs, and abuse women. That is all bad and the kids today shouldn't be doing that sort of stuff. We ought to ban that music!"

Joe: "So, you think that getting rid of the rap music would solve the drug, violence and sexism problems in the US?"

Bill: "Well, it wouldn't get rid of it all, but it would take care of a lot of it."

Joe: "Don't you think that most of the rap singers sing about that sort of stuff because that is what is really going on these days? I mean, people often sing about the conditions of their time, just like the people did in the sixties. But then I suppose that you think that people were against the war and into drugs just because they listened to Dylan and Baez."

Bill: "Well..."

Joe: "Well, it seems to me that the main cause of the content of the rap music is the pre-existing social conditions. If there weren't all these problems, the rap singers probably wouldn't be singing about them. I also think that if the social conditions were great, kids could listen to the music all day and not be affected."

Bill: "Well, I still think the rap music causes the problems. You can't argue against the fact that social ills really picked up at the same time rap music got started."

2. It is claimed by some people that severe illness is caused by depression and anger. After all, people who are severely ill are very often depressed and angry. Thus, it follows that the cause of severe illness actually is the depression and anger. So, a good and cheerful attitude is key to staying healthy.
 3. Bill sets out several plates with bread on them. After a couple days, he notices that the bread has mold growing all over it. Bill concludes that the mold was produced by the bread going bad. When Bill tells his mother about his experiment, she tells him that the mold was the cause of the bread going bad and that he better clean up the mess if he wants to get his allowance this week.
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Fallacy: Division

Description of Division

The fallacy of Division is committed when a person infers that what is true of a whole must also be true of its constituents and justification for that inference is not provided.

There are two main variants of the general fallacy of Division:

The first type of fallacy of Division is committed when 1) a person reasons that what is true of the whole must also be true of the parts and 2) the person fails to justify that inference with the required degree of evidence. More formally, the "reasoning" follows this sort of pattern:

1. The whole, X, has properties A, B, C, etc.
2. Therefore the parts of X have properties A, B, C, etc.

That this line of reasoning is fallacious is made clear by the following case: 4 is an even number. 1 and 3 are parts of 4. Therefore 1 and 3 are even.

It should be noted that it is not always fallacious to draw a conclusion about the parts of a whole based on the properties of the whole. As long as adequate evidence is provided in the argument, the reasoning can be acceptable. For example, the human body is made out of matter and it is reasonable to infer from this that the parts that make up the human body are also made out of matter. This is because there is no reason to believe that the body is made up of non-material parts that somehow form matter when they get together.

The second version of the fallacy of division is committed when a person 1) draws a conclusion about the properties of individual members of a class or group based on the collective properties of the class or group and 2) there is not enough justification for the conclusion. More formally, the line of "reasoning" is as follows:

1. As a collective, Group or class X has properties A, B, C, etc.
2. Therefore the individual members of group or class X have properties A, B, C, etc.

That this sort of reasoning is fallacious can be easily shown by the following: It is true that athletes, taken as a group, are football players, track runners, swimmers, tennis players, long jumpers, pole vaulters and such. But it would be fallacious to infer that each individual athlete is a football player, a track runner, a swimmer, a tennis player, a swimmer, etc.

It should be noted that it is not always fallacious to draw a conclusion about an individual based on what is true of the class he/she/it belongs to. If the inference is backed by evidence, then the reasoning can be fine. For example, it is not fallacious to infer that Bill the Siamese cat is a mammal from the fact that all cats are mammals. In this case, what is true of the class is also true of each individual member.

Examples of Division

1. "The ball is blue, therefore the atoms that make it up are also blue."
2. "A living cell is organic material, so the chemicals making up the cell must also be organic material."
3. "Bill lives in a large building, so his apartment must be large."
4. "Sodium chloride (table salt) may be safely eaten. Therefore its constituent elements, sodium and chloride, may be safely eaten."
5. "Americans use much more electricity than Africans do. So Bill, who lives in primitive cabin in Maine, uses more electricity than Nelson, who lives in a modern house in South Africa. "
6. "Men receive more higher education than women. Therefore Dr. Jane Smart has less higher education than Mr. Bill Buffoon. "
7. "Minorities get paid less than 'whites' in America. Therefore, the black CEO of a multi-billion dollar company gets paid less than the white janitor who cleans his office."

Fallacy: False Dilemma

Also Known as: Black & White Thinking.

Description of False Dilemma

A False Dilemma is a fallacy in which a person uses the following pattern of "reasoning":

1. Either claim X is true or claim Y is true (when X and Y could both be false).
2. Claim Y is false.
3. Therefore claim X is true.

This line of "reasoning" is fallacious because if both claims could be false, then it cannot be inferred that one is true because the other is false. That this is the case is made clear by the following example:

1. Either $1+1=4$ or $1+1=12$.
2. It is not the case that $1+1=4$.
3. Therefore $1+1=12$.

In cases in which the two options are, in fact, the only two options, this line of reasoning is not fallacious. For example:

1. Bill is dead or he is alive.
2. Bill is not dead.
3. Therefore Bill is alive.

Examples of False Dilemma

1. Senator Jill: "We'll have to cut education funding this year."
Senator Bill: "Why?"
Senator Jill: "Well, either we cut the social programs or we live with a huge deficit and we can't live with the deficit."
 2. Bill: "Jill and I both support having prayer in public schools."
Jill: "Hey, I never said that!"
Bill: "You're not an atheist are you Jill?"
 3. "Look, you are going to have to make up your mind. Either you decide that you can afford this stereo, or you decide you are going to do without music for a while."
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Fallacy: Gambler's Fallacy

Description of Gambler's Fallacy

The Gambler's Fallacy is committed when a person assumes that a departure from what occurs on average or in the long term will be corrected in the short term. The form of the fallacy is as follows:

1. X has happened.
2. X departs from what is expected to occur on average or over the long term.
3. Therefore, X will come to an end soon.

There are two common ways this fallacy is committed. In both cases a person is assuming that some result must be "due" simply because what has previously happened departs from what would be expected on average or over the long term.

The first involves events whose probabilities of occurring are independent of one another. For example, one toss of a fair (two sides, non-loaded) coin does not affect the next toss of the coin. So, each time the coin is tossed there is (ideally) a 50% chance of it landing heads and a 50% chance of it landing tails. Suppose that a person tosses a coin 6 times and gets a head each time. If he concludes that the next toss will be tails because tails "is due", then he will have committed the Gambler's Fallacy. This is because the results of previous tosses have no bearing on the outcome of the 7th toss. It has a 50% chance of being heads and a 50% chance of being tails, just like any other toss.

The second involves cases whose probabilities of occurring are not independent of one another. For example, suppose that a boxer has won 50% of his fights over the past two years. Suppose that after several fights he has won 50% of his matches this year, that he has lost his last six fights and he has six left. If a person believed that he would win his next six fights because he has used up his losses and is "due" for a victory, then he would have committed the Gambler's Fallacy. After all, the person would be ignoring the fact that the results of one match can influence the results of the next one. For example, the boxer might have been injured in one match which would lower his chances of winning his last six fights.

It should be noted that not all predictions about what is likely to occur are fallacious. If a person has good evidence for his predictions, then they will be reasonable to accept. For example, if a person tosses a fair coin and gets nine heads in a row it would be reasonable for him to conclude that he will probably not get another nine in a row again. This reasoning would not be fallacious as long as he believed his conclusion because of an understanding of the laws of probability. In this case, if he concluded that he would not get another nine heads in a row because the odds of getting nine heads in a row are lower than getting fewer than nine heads in a row, then his reasoning would be good and his conclusion would be justified. Hence, determining whether or not the Gambler's Fallacy is being committed often requires some basic understanding of the laws of probability.

Examples of Gambler's Fallacy

1. Bill is playing against Doug in a WWII tank battle game. Doug has had a great "streak of luck" and has been killing Bill's tanks left and right with good die rolls. Bill, who has a few tanks left, decides to risk all in a desperate attack on Doug. He is a bit worried that Doug might wipe him out, but he thinks that since Doug's luck at rolling has been great Doug must be due for some bad dice rolls. Bill launches his attack and Doug butchers his forces.
2. Jane and Bill are talking:

Jane: "I'll be able to buy that car I always wanted soon."

Bill: "Why, did you get a raise?"

Jane: "No. But you know how I've been playing the lottery all these years?"

Bill: "Yes, you buy a ticket for every drawing, without fail."

Jane: "And I've lost every time."

Bill: "So why do you think you will win this time?"

Jane: "Well, after all those losses I'm due for a win."

3. Joe and Sam are at the race track betting on horses.

Joe: "You see that horse over there? He lost his last four races. I'm going to bet on him."

Sam: "Why? I think he will probably lose."

Joe: "No way, Sam. I looked up the horse's stats and he has won half his races in the past two years. Since he has lost three of his last four races, he'll have to win this race. So I'm betting the farm on him."

Sam: "Are you sure?"

Joe: "Of course I'm sure. That pony is due, man...he's due!"

Fallacy: Genetic Fallacy

Description of Genetic Fallacy

A Genetic Fallacy is a line of "reasoning" in which a perceived defect in the origin of a claim or thing is taken to be evidence that discredits the claim or thing itself. It is also a line of reasoning in which the origin of a claim or thing is taken to be evidence for the claim or thing. This sort of "reasoning" has the following form:

1. The origin of a claim or thing is presented.
2. The claim is true(or false) or the thing is supported (or discredited).

It is clear that sort of "reasoning" is fallacious. For example: "Bill claims that $1+1=2$. However, my parents brought me up to believe that $1+1=254$, so Bill must be wrong."

It should be noted that there are some cases in which the origin of a claim is relevant to the truth or falsity of the claim. For example, a claim that comes from a reliable expert is likely to be true (provided it is in her area of expertise).

Examples of Genetic Fallacy

1. "The current Chancellor of Germany was in the Hitler Youth at age 3. With that sort of background, his so called 'reform' plan must be a fascist program."
 2. "I was brought up to believe in God, and my parents told me God exists, so He must."
 3. "Sure, the media claims that Senator Bedfellow was taking kickbacks. But we all know about the media's credibility, don't we."
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Fallacy: Guilt By Association

Also Known as: Bad Company Fallacy, Company that You Keep Fallacy

Description of Guilt By Association

Guilt by Association is a fallacy in which a person rejects a claim simply because it is pointed out that people she dislikes accept the claim. This sort of "reasoning" has the following form:

1. It is pointed out that people person A does not like accept claim P.
2. Therefore P is false

It is clear that sort of "reasoning" is fallacious. For example the following is obviously a case of poor "reasoning": "You think that $1+1=2$. But, Adolf Hitler, Charles Manson, Joseph Stalin, and Ted Bundy all believed that $1+1=2$. So, you shouldn't believe it."

The fallacy draws its power from the fact that people do not like to be associated with people they dislike. Hence, if it is shown that a person shares a belief with people he dislikes he might be influenced into rejecting that belief. In such cases the person will be rejecting the claim based on how he thinks or feels about the people who hold it and because he does not want to be associated with such people.

Of course, the fact that someone does not want to be associated with people she dislikes does not justify the rejection of any claim. For example, most wicked and terrible people accept that the earth revolves around the sun and that lead is heavier than helium. No sane person would reject these claims simply because this would put them in the company of people they dislike (or even hate).

Examples of Guilt By Association

1. Will and Kiteena are arguing over socialism. Kiteena is a pacifist and hates violence and violent people.

Kiteena: "I think that the United States should continue to adopt socialist programs. For example, I think that the government should take control of vital industries."

Will: "So, you are for state ownership of industry."

Kiteena: "Certainly. It is a great idea and will help make the world a less violent place."

Will: "Well, you know Stalin also endorsed state ownership on industry. At last count he wiped out millions of his own people. Pol Pot of Cambodia was also for state ownership of industry. He also killed millions of his own people. The leadership of China is for state owned industry. They killed their own people in that square. So, are you still for state ownership of industry?"

Kiteena: "Oh, no! I don't want to be associated with those butchers!"

2. Jen and Sandy are discussing the topic of welfare. Jen is fairly conservative politically but she has been an active opponent of racism. Sandy is extremely liberal politically.

Jen: "I was reading over some private studies of welfare and I think it would be better to have people work for their welfare. For example, people could pick up trash, put up signs, and maybe even do skilled labor that they are qualified for. This would probably make people feel better about themselves and it would get more out of our tax money."

Sandy: "I see. So, you want to have the poor people out on the streets picking up trash for their checks? Well, you know that is exactly the position David Count endorses."

Jen: "Who is he?"

Sandy: "I'm surprised you don't know him, seeing how alike you two are. He was a Grand Mooky Wizard for the Aryan Pure White League and is well known for his hatred of blacks and other minorities. With your views, you'd fit right in to his little racist club."

Jen: "So, I should reject my view just because I share it with some racist?"

Sandy: "Of course."

3. Libard and Ferris are discussing who they are going to vote for as the next department chair in the philosophy department. Libard is a radical feminist and she despises Wayne and Bill, who are two sexist professors in the department.

Ferris: "So, who are you going to vote for?"

Libard: "Well, I was thinking about voting for Jane, since she is a woman and there has never been a woman chair here. But, I think that Steve will do an excellent job. He has a lot of clout in the university and he is a decent person."

Ferris: "You know, Wayne and Bill are supporting him. They really like the idea of having Steve as the new chair. I never thought I'd see you and those two pigs on the same side."

Libard: "Well, maybe it is time that we have a woman as chair."

Fallacy: Hasty Generalization

Also Known as: Fallacy of Insufficient Statistics, Fallacy of Insufficient Sample, Leaping to A Conclusion, Hasty Induction.

Description of Hasty Generalization

This fallacy is committed when a person draws a conclusion about a population based on a sample that is not large enough. It has the following form:

1. Sample S, which is too small, is taken from population P.
2. Conclusion C is drawn about Population P based on S.

The person committing the fallacy is misusing the following type of reasoning, which is known variously as Inductive Generalization, Generalization, and Statistical Generalization:

1. X% of all observed A's are B's.
2. Therefore X% of all A's are Bs.

The fallacy is committed when not enough A's are observed to warrant the conclusion. If enough A's are observed then the reasoning is not fallacious.

Small samples will tend to be unrepresentative. As a blatant case, asking one person what she thinks about gun control would clearly not provide an adequate sized sample for determining what Canadians in general think about the issue. The general idea is that small samples are less likely to contain numbers proportional to the whole population. For example, if a bucket contains blue, red, green and orange marbles, then a sample of three marbles cannot possibly be representative of the whole population of marbles. As the sample size of marbles increases the more likely it becomes that marbles of each color will be selected in proportion to their numbers in the whole population. The same holds true for things others than marbles, such as people and their political views.

Since Hasty Generalization is committed when the sample (the observed instances) is too small, it is important to have samples that are large enough when making a generalization. The most reliable way to do this is to take as large a sample as is practical. There are no fixed numbers as to what counts as being large enough. If the population in question is not very diverse (a population of cloned mice, for example) then a very small sample would suffice. If the population is very diverse (people, for example) then a fairly large sample would be needed. The size of the sample also depends on the size of the population. Obviously, a very small population will not support a huge sample. Finally, the required size will depend on the purpose of the sample. If Bill wants to know what Joe and Jane think about gun control, then a sample consisting of Bill and Jane would (obviously) be large enough. If Bill wants to know what most Australians think about gun control, then a sample consisting of Bill and Jane would be far too small.

People often commit Hasty Generalizations because of bias or prejudice. For example, someone who is a sexist might conclude that all women are unfit to fly jet fighters because one woman crashed one. People also commonly commit Hasty Generalizations because of laziness or sloppiness. It is very easy to simply leap to a conclusion and much harder to gather an adequate sample and draw a justified conclusion. Thus, avoiding this fallacy requires minimizing the influence of bias and taking care to select a sample that is large enough.

One final point: a Hasty Generalization, like any fallacy, might have a true conclusion. However, as long as the reasoning is fallacious there is no reason to accept the conclusion based on that reasoning.

Examples of Hasty Generalization

1. Smith, who is from England, decides to attend graduate school at Ohio State University. He has never been to the US before. The day after he arrives, he is walking back from an orientation session and sees two white (albino) squirrels chasing each other around a tree. In his next letter home, he tells his family that American squirrels are white.

2. Sam is riding her bike in her home town in Maine, minding her own business. A station wagon comes up behind her and the driver starts beeping his horn and then tries to force her off the road. As he goes by, the driver yells "get on the sidewalk where you belong!" Sam sees that the car has Ohio plates and concludes that all Ohio drivers are jerks.
 3. Bill: "You know, those feminists all hate men."
Joe: "Really?"
Bill: "Yeah. I was in my philosophy class the other day and that Rachel chick gave a presentation."
Joe: "Which Rachel?"
Bill: "You know her. She's the one that runs that feminist group over at the Women's Center. She said that men are all sexist pigs. I asked her why she believed this and she said that her last few boyfriends were real sexist pigs. "
Joe: "That doesn't sound like a good reason to believe that all of us are pigs."
Bill: "That was what I said."
Joe: "What did she say?"
Bill: "She said that she had seen enough of men to know we are all pigs. She obviously hates all men."
Joe: "So you think all feminists are like her?"
Bill: "Sure. They all hate men."
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Fallacy: Ignoring a Common Cause

Also Known as: Questionable Cause

Description of Ignoring a Common Cause

This fallacy has the following general structure:

1. A and B are regularly connected (but no third, common cause is looked for).
2. Therefore A is the cause of B.

This fallacy is committed when it is concluded that one thing causes another simply because they are regularly associated. More formally, this fallacy is committed when it is concluded that A is the cause of B simply because A and B are regularly connected. Further, the causal conclusion is drawn without considering the possibility that a third factor might be the cause of both A and B.

In many cases, the fallacy is quite evident. For example, if a person claimed that a person's sneezing was caused by her watery eyes and he simply ignored the fact that the woman was standing in a hay field, he would have fallen prey to the fallacy of ignoring a common cause. In this case, it would be reasonable to conclude that the woman's sneezing and watering eyes were caused by an allergic reaction of some kind. In other cases, it is not as evident that the fallacy is being committed. For example, a doctor might find a large amount of bacteria in one of her patients and conclude that the bacteria are the cause of the patient's illness. However, it might turn out that the bacteria are actually harmless and that a virus is weakening the person, Thus, the viruses would be the actual cause of the illness and growth of the bacteria (the viruses would weaken the ability of the person's body to resist the growth of the bacteria).

As noted in the discussion of other causal fallacies, causality is a rather difficult matter. However, it is possible to avoid this fallacy by taking due care. In the case of Ignoring a Common Cause, the key to avoiding this fallacy is to be careful to check for other factors that might be the actual cause of both the suspected cause and the suspected effect. If a person fails to check for the possibility of a common cause, then they will commit this fallacy. Thus, it is always a good idea to always ask "could there be a third factor that is actually causing both A and B?"

Examples of Ignoring a Common Cause

1. One day Bill wakes up with a fever. A few hours later he finds red spots on his skin. he concludes that the fever must have caused the red spots. His friend insists that the spots and the fever are caused by some microbe. Bill laughs at this and insists that if he spends the day in a tub of cold water his spots will go away.
 2. Over the course of several weeks the needles from the pine trees along the Wombat river fell into the water. Shortly thereafter, many dead fish washed up on the river banks. When the EPA investigated, the owners of the Wombat River Chemical Company claimed that it was obvious that the pine needles had killed the fish. Many local environmentalists claimed that the chemical plant's toxic wastes caused both the trees and the fish to die and that the pine needles had no real effect on the fish.
 3. A thunderstorm wakes Joe up in the middle of the night. He goes downstairs to get some milk to help him get back to sleep. On the way to the refrigerator, he notices that the barometer has fallen a great deal. Joe concludes that the storm caused the barometer to fall. In the morning he tells his wife about his conclusion. She tells him that it was a drop in atmospheric pressure that caused the barometer to drop and the storm.
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Fallacy: Middle Ground

Also Known as: Golden Mean Fallacy, Fallacy of Moderation

Description of Middle Ground

This fallacy is committed when it is assumed that the middle position between two extremes must be correct simply because it is the middle position. This sort of "reasoning" has the following form:

1. Position A and B are two extreme positions.
2. C is a position that rests in the middle between A and B.
3. Therefore C is the correct position.

This line of "reasoning" is fallacious because it does not follow that a position is correct just because it lies in the middle of two extremes. This is shown by the following example. Suppose that a person is selling his computer. He wants to sell it for the current market value, which is \$800 and someone offers him \$1 for it. It would hardly follow that \$400.50 is the proper price.

This fallacy draws its power from the fact that a moderate or middle position is often the correct one. For example, a moderate amount of exercise is better than too much exercise or too little exercise. However, this is not simply because it lies in the middle ground between two extremes. It is because too much exercise is harmful and too little exercise is all but useless. The basic idea behind many cases in which moderation is correct is that the extremes are typically "too much" and "not enough" and the middle position is "enough." In such cases the middle position is correct almost by definition.

It should be kept in mind that while uncritically assuming that the middle position must be correct because it is the middle position is poor reasoning it does not follow that accepting a middle position is always fallacious. As was just mentioned, many times a moderate position is correct. However, the claim that the moderate or middle position is correct must be supported by legitimate reasoning.

Examples of Middle Ground

1. Some people claim that God is all powerful, all knowing, and all good. Other people claim that God does not exist at all. Now, it seems reasonable to accept a position somewhere in the middle. So, it is likely that God exists, but that he is only very powerful, very knowing, and very good. That seems right to me.
 2. Congressman Jones has proposed cutting welfare payments by 50% while Congresswoman Shender has proposed increasing welfare payments by 10% to keep up with inflation and cost of living increases. I think that the best proposal is the one made by Congressman Trumble. He says that a 30% decrease in welfare payments is a good middle ground, so I think that is what we should support.
 3. A month ago, a tree in Bill's yard was damaged in a storm. His neighbor, Joe, asked him to have the tree cut down so it would not fall on Joes new shed. Bill refused to do this. Two days ago another storm blew the tree onto Joe's new shed. Joe demanded that Joe pay the cost of repairs, which was \$250. Bill said that he wasn't going to pay a cent. Obviously, the best solution is to reach a compromise between the two extremes, so Bill should pay Joe \$125 dollars.
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Fallacy: Misleading Vividness

Description of Misleading Vividness

Misleading Vividness is a fallacy in which a very small number of particularly dramatic events are taken to outweigh a significant amount of statistical evidence. This sort of "reasoning" has the following form:

Dramatic or vivid event X occurs (and is not in accord with the majority of the statistical evidence)

Therefore events of type X are likely to occur.

This sort of "reasoning" is fallacious because the mere fact that an event is particularly vivid or dramatic does not make the event more likely to occur, especially in the face of significant statistical evidence.

People often accept this sort of "reasoning" because particularly vivid or dramatic cases tend to make a very strong impression on the human mind. For example, if a person survives a particularly awful plane crash, he might be inclined to believe that air travel is more dangerous than other forms of travel. After all, explosions and people dying around him will have a more significant impact on his mind than will the rather dull statistics that a person is more likely to be struck by lightning than killed in a plane crash.

It should be kept in mind that taking into account the possibility of something dramatic or vivid occurring is not always fallacious. For example, a person might decide to never go sky diving because the effects of an accident can be very, very dramatic. If he knows that, statistically, the chances of the accident are happening are very low but he considers even a small risk to be unacceptable, then he would not be making an error in reasoning.

Examples of Misleading Vividness

Bill and Jane are talking about buying a computer.

Jane: "I've been thinking about getting a computer. I'm really tired of having to wait in the library to write my papers."

Bill: "What sort of computer do you want to get?"

Jane: "Well, it has to be easy to use, have a low price and have decent processing power. I've been thinking about getting a Kiwi Fruit 2200. I read in that consumer magazine that they have been found to be very reliable in six independent industry studies."

Bill: "I wouldn't get the Kiwi Fruit. A friend of mine bought one a month ago to finish his master's thesis. He was halfway through it when smoke started pouring out of the CPU. He didn't get his thesis done on time and he lost his financial aid. Now he's working over at the Gut Boy Burger Warehouse."

Jane: "I guess I won't go with the Kiwi!"

Joe and Drew are talking about flying.

Joe: "When I was flying back to school, the pilot came on the intercom and told us that the plane was having engine trouble. I looked out the window and I saw smoke billowing out of the engine nearest me. We had to make an emergency landing and there were fire trucks everywhere. I had to spend the next six hours sitting in the airport waiting for a flight. I was lucky I didn't die! I'm never flying again."

Drew: "So how are you going to get home over Christmas break?"

Joe: "I'm going to drive. That will be a lot safer than flying."

Drew: "I don't think so. You are much more likely to get injured or killed driving than flying."

Joe: "I don't buy that! You should have seen the smoke pouring out of that engine! I'm never getting on one of those death traps again!"

Jane and Sarah are talking about running in a nearby park.

Jane: "Did you hear about that woman who was attacked in Tuttle Park?"

Sarah: "Yes. It was terrible."

Jane: "Don't you run there everyday?"

Sarah: "Yes."

Jane: "How can you do that? I'd never be able to run there!"

Sarah: "Well, as callous as this might sound, that attack was out of the ordinary. I've been running there for three years and this has been the only attack. Sure, I worry about being attacked, but I'm not going give up my running just because there is some slight chance I'll be attacked."

Jane: "That is stupid! I'd stay away from that park if I was you! That woman was really beat up badly so you know it is going to happen again. If you don't stay out of that park, it will probably happen to you!"

Fallacy: Personal Attack

Also Known as: Ad Hominem Abusive.

Description of Personal Attack

A personal attack is committed when a person substitutes abusive remarks for evidence when attacking another person's claim or claims. This line of "reasoning" is fallacious because the attack is directed at the person making the claim and not the claim itself. The truth value of a claim is independent of the person making the claim. After all, no matter how repugnant an individual might be, he or she can still make true claims.

Not all ad Hominems are fallacious. In some cases, an individual's characteristics can have a bearing on the question of the veracity of her claims. For example, if someone is shown to be a pathological liar, then what he says can be considered to be unreliable. However, such attacks are weak, since even pathological liars might speak the truth on occasion.

In general, it is best to focus one's attention on the content of the claim and not on who made the claim. It is the content that determines the truth of the claim and not the characteristics of the person making the claim.

Examples of Personal Attack

1. In a school debate, Bill claims that the President's economic plan is unrealistic. His opponent, a professor, retorts by saying "the freshman has his facts wrong."
 2. "This theory about a potential cure for cancer has been introduced by a doctor who is a known lesbian feminist. I don't see why we should extend an invitation for her to speak at the World Conference on Cancer."
 3. "Bill says that we should give tax breaks to companies. But he is untrustworthy, so it must be wrong to do that."
 4. "That claim cannot be true. Dave believes it, and we know how morally repulsive he is."
 5. "Bill claims that Jane would be a good treasurer. However I find Bill's behavior offensive, so I'm not going to vote for Jill."
 6. "Jane says that drug use is morally wrong, but she is just a goody-two shoes Christian, so we don't have to listen to her."
 7. Bill: "I don't think it is a good idea to cut social programs."
Jill: "Why not?"
Bill: "Well, many people do not get a fair start in life and hence need some help. After all, some people have wealthy parents and have it fairly easy. Others are born into poverty and..."
Jill: "You just say that stuff because you have a soft heart and an equally soft head."
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Fallacy: Poisoning the Well

Description of Poisoning the Well

This sort of "reasoning" involves trying to discredit what a person might later claim by presenting unfavorable information (be it true or false) about the person. This "argument" has the following form:

1. Unfavorable information (be it true or false) about person A is presented.
2. Therefore any claims person A makes will be false.

This sort of "reasoning" is obviously fallacious. The person making such an attack is hoping that the unfavorable information will bias listeners against the person in question and hence that they will reject any claims he might make. However, merely presenting unfavorable information about a person (even if it is true) hardly counts as evidence against the claims he/she might make. This is especially clear when Poisoning the Well is looked at as a form of ad Hominem in which the attack is made prior to the person even making the claim or claims. The following example clearly shows that this sort of "reasoning" is quite poor.

Before Class:

Bill: "Boy, that professor is a real jerk. I think he is some sort of Eurocentric fascist."

Jill: "Yeah."

During Class:

Prof. Jones: "...and so we see that there was never any 'Golden Age of Matriarchy' in 1895 in America."

After Class:

Bill: "See what I mean?"

Jill: "Yeah. There must have been a Golden Age of Matriarchy, since that jerk said there wasn't."

Examples of Poisoning the Well

1. "Don't listen to him, he's a scoundrel."
 2. "Before turning the floor over to my opponent, I ask you to remember that those who oppose my plans do not have the best wishes of the university at heart."
 3. You are told, prior to meeting him, that your friend's boyfriend is a decadent wastrel. When you meet him, everything you hear him say is tainted.
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Fallacy: Post Hoc

Also Known as: Post Hoc Ergo Propter Hoc, False Cause, Questionable Cause, Confusing Coincidental Relationships With Causes

Description of Post Hoc

A Post Hoc is a fallacy with the following form:

1. A occurs before B.
2. Therefore A is the cause of B.

The Post Hoc fallacy derives its name from the Latin phrase "Post hoc, ergo propter hoc." This has been traditionally interpreted as "After this, therefore because of this." This fallacy is committed when it is concluded that one event causes another simply because the proposed cause occurred before the proposed effect. More formally, the fallacy involves concluding that A causes or caused B because A occurs before B and there is not sufficient evidence to actually warrant such a claim.

It is evident in many cases that the mere fact that A occurs before B in no way indicates a causal relationship. For example, suppose Jill, who is in London, sneezed at the exact same time an earthquake started in California. It would clearly be irrational to arrest Jill for starting a natural disaster, since there is no reason to suspect any causal connection between the two events. While such cases are quite obvious, the Post Hoc fallacy is fairly common because there are cases in which there might be some connection between the events. For example, a person who has her computer crash after she installs a new piece of software would probably suspect that the software was to blame. If she simply concluded that the software caused the crash because it was installed before the crash she would be committing the Post Hoc fallacy. In such cases the fallacy would be committed because the evidence provided fails to justify acceptance of the causal claim. It is even theoretically possible for the fallacy to be committed when A really does cause B, provided that the "evidence" given consists only of the claim that A occurred before B. The key to the Post Hoc fallacy is not that there is no causal connection between A and B. It is that adequate evidence has not been provided for a claim that A causes B. Thus, Post Hoc resembles a Hasty Generalization in that it involves making a leap to an unwarranted conclusion. In the case of the Post Hoc fallacy, that leap is to a causal claim instead of a general proposition.

Not surprisingly, many superstitions are probably based on Post Hoc reasoning. For example, suppose a person buys a good luck charm, does well on his exam, and then concludes that the good luck charm caused him to do well. This person would have fallen victim to the Post Hoc fallacy. This is not to say that all "superstitions" have no basis at all. For example, some "folk cures" have actually been found to work.

Post Hoc fallacies are typically committed because people are simply not careful enough when they reason. Leaping to a causal conclusion is always easier and faster than actually investigating the phenomenon. However, such leaps tend to land far from the truth of the matter. Because Post Hoc fallacies are committed by drawing an unjustified causal conclusion, the key to avoiding them is careful investigation. While it is true that causes proceed effects (outside of Star Trek, anyways), it is not true that precedence makes something a cause of something else. Because of this, a causal investigation should begin with finding what occurs before the effect in question, but it should not end there.

Examples of Post Hoc

1. I had been doing pretty poorly this season. Then my girlfriend gave me this neon laces for my spikes and I won my next three races. Those laces must be good luck...if I keep on wearing them I can't help but win!
2. Bill purchases a new PowerMac and it works fine for months. He then buys and installs a new piece of software. The next time he starts up his Mac, it freezes. Bill concludes that the software must be the cause of the freeze.
3. Joan is scratched by a cat while visiting her friend. Two days later she comes down with a fever. Joan concludes that the cat's scratch must be the cause of her illness.

4. The Republicans pass a new tax reform law that benefits wealthy Americans. Shortly thereafter the economy takes a nose dive. The Democrats claim that the tax reform caused the economic woes and they push to get rid of it.
 5. The picture on Jim's old TV set goes out of focus. Jim goes over and strikes the TV soundly on the side and the picture goes back into focus. Jim tells his friend that hitting the TV fixed it.
 6. Jane gets a rather large wart on her finger. Based on a story her father told her, she cuts a potato in half, rubs it on the wart and then buries it under the light of a full moon. Over the next month her wart shrinks and eventually vanishes. Jane writes her father to tell him how right he was about the cure.
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Fallacy: Questionable Cause

Description of Questionable Cause

This fallacy has the following general form:

1. A and B are associated on a regular basis.
2. Therefore A is the cause of B.

The general idea behind this fallacy is that it is an error in reasoning to conclude that one thing causes another simply because the two are associated on a regular basis. More formally, this fallacy is committed when it is concluded that A is the cause of B simply because they are associated on a regular basis. The error being made is that a causal conclusion is being drawn from inadequate evidence.

The Questionable Cause Fallacy is actually a general type of fallacy. Any causal fallacy that involves an error in a reasoning due to a failure to adequately investigate the suspected cause is a fallacy of this type. Thus, fallacies like [Post Hoc](#) and [Confusing Cause and Effect](#) are specific examples of the general Questionable Cause Fallacy.

Causal reasoning can be quite difficult since causation is a rather complex philosophic issue. The complexity of causation is briefly discussed in the context of the specific versions of this fallacy.

The key to avoiding the Questionable Cause fallacy is to take due care in drawing causal conclusions. This requires taking steps to adequately investigate the phenomena in question as well using the proper methods of careful investigation.

Examples of Questionable Cause

1. Joe gets a chain letter that threatens him with dire consequences if he breaks the chain. He laughs at it and throws it in the garbage. On his way to work he slips and breaks his leg. When he gets back from the hospital he sends out 200 copies of the chain letter, hoping to avoid further accidents.
 2. When investigating a small pond a group of graduate students found that there was a severe drop in the fish population. Further investigation revealed that the fishes' food supply had also been severely reduced. At first the students believed that the lack of food was killing the fish, but then they realized they had to find what was causing the decline in the food supply. The students suspected acid rain was the cause of both the reduction in the fish population as well as the food supply. However, the local business council insisted that it was just the lack of food that caused the reduction in the fish population. Most of the townspeople agreed with this conclusion since it seemed pretty obvious that a lack of food would cause fish to die.
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Fallacy: Red Herring

Also Known as: Smoke Screen, Wild Goose Chase.

Description of Red Herring

A Red Herring is a fallacy in which an irrelevant topic is presented in order to divert attention from the original issue. The basic idea is to "win" an argument by leading attention away from the argument and to another topic. This sort of "reasoning" has the following form:

1. Topic A is under discussion.
2. Topic B is introduced under the guise of being relevant to topic A (when topic B is actually not relevant to topic A).
3. Topic A is abandoned.

This sort of "reasoning" is fallacious because merely changing the topic of discussion hardly counts as an argument against a claim.

Examples of Red Herring

"We admit that this measure is popular. But we also urge you to note that there are so many bond issues on this ballot that the whole thing is getting ridiculous."

"Argument" for a tax cut:

"You know, I've begun to think that there is some merit in the Republican's tax cut plan. I suggest that you come up with something like it, because If we Democrats are going to survive as a party, we have got to show that we are as tough-minded as the Republicans, since that is what the public wants."

"Argument" for making grad school requirements stricter:

"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."

Fallacy: Relativist Fallacy

Also Known as: The Subjectivist Fallacy.

Description of Relativist Fallacy

The Relativist Fallacy is committed when a person rejects a claim by asserting that the claim might be true for others but is not for him/her. This sort of "reasoning" has the following form:

1. Claim X is presented.
2. Person A asserts that X may be true for others but is not true for him/her.
3. Therefore A is justified in rejecting X.

In this context, relativism is the view that truth is relative to Z (a person, time, culture, place, etc.). This is not the view that claims will be true at different times or of different people, but the view that a claim could be true for one person and false for another at the same time.

In many cases, when people say "that X is true for me" what they really mean is "I believe X" or "X is true about me." It is important to be quite clear about the distinction between being true about a person and being true for a person. A claim is true about a person if the claim is a statement that describes the person correctly. For example, "Bill has blue eyes" is true of Bill if Bill has blue eyes. To make a claim such as "X is true for Bill" is to say that the claim is true for Bill and that it need not be true for others. For example: "1+1=23 is true for Bill" would mean that, for Bill, 1+1 actually does equal 23, not that he merely believes that 1+1=23 (that would be "It is true of Bill that he believes 1+1=23"). Another example would be "The claim that the earth is flat is true for Bill" would mean that the earth really is flat for Bill (in other words, Bill would be in a different world than the rest of the human race). Since these situations (1+1 being 23 and the earth being flat for Bill) are extremely strange, it certainly seems that truth is not relative to individuals (although beliefs are).

As long as truth is objective (that is, not relative to individuals), then the Relativist Fallacy is a fallacy. If there are cases in which truth is actually relative, then such reasoning need not be fallacious.

Examples of Relativist Fallacy

1. Jill: "Look at this, Bill. I read that people who do not get enough exercise tend to be unhealthy."
Bill: "That may be true for you, but it is not true for me."
 2. Jill: "I think that so called argument you used to defend your position is terrible. After all, a fallacy hardly counts as an argument. "
Bill: "That may be true for you, but it is not true for me."
 3. Bill: "Your position results in a contradiction, so I can't accept it."
Dave: "Contradictions may be bad on your Eurocentric, oppressive, logical world view, but I don't think they are bad. Therefore my position is just fine."
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Fallacy: Slippery Slope

Also Known as: The Camel's Nose.

Description of Slippery Slope

The Slippery Slope is a fallacy in which a person asserts that some event must inevitably follow from another without any argument for the inevitability of the event in question. In most cases, there are a series of steps or gradations between one event and the one in question and no reason is given as to why the intervening steps or gradations will simply be bypassed. This "argument" has the following form:

1. Event X has occurred (or will or might occur).
2. Therefore event Y will inevitably happen.

This sort of "reasoning" is fallacious because there is no reason to believe that one event must inevitably follow from another without an argument for such a claim. This is especially clear in cases in which there is a significant number of steps or gradations between one event and another.

Examples of Slippery Slope

1. "We have to stop the tuition increase! The next thing you know, they'll be charging \$40,000 a semester!"
 2. "The US shouldn't get involved militarily in other countries. Once the government sends in a few troops, it will then send in thousands to die."
 3. "You can never give anyone a break. If you do, they'll walk all over you."
 4. "We've got to stop them from banning pornography. Once they start banning one form of literature, they will never stop. Next thing you know, they will be burning all the books!"
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Fallacy: Special Pleading

Description of Special Pleading

Special Pleading is a fallacy in which a person applies standards, principles, rules, etc. to others while taking herself (or those she has a special interest in) to be exempt, without providing adequate justification for the exemption. This sort of "reasoning" has the following form:

1. Person A accepts standard(s) S and applies them to others in circumstance(s) C.
2. Person A is in circumstance(s) C.
3. Therefore A is exempt from S.

The person committing Special Pleading is claiming that he is exempt from certain principles or standards yet he provides no good reason for his exemption. That this sort of reasoning is fallacious is shown by the following extreme example:

1. Barbara accepts that all murderers should be punished for their crimes.
2. Although she murdered Bill, Barbara claims she is an exception because she really would not like going to prison.
3. Therefore, the standard of punishing murderers should not be applied to her.

This is obviously a blatant case of special pleading. Since no one likes going to prison, this cannot justify the claim that Barbara alone should be exempt from punishment.

From a philosophic standpoint, the fallacy of Special Pleading is violating a well accepted principle, namely the Principle of Relevant Difference. According to this principle, two people can be treated differently if and only if there is a relevant difference between them. This principle is a reasonable one. After all, it would not be particularly rational to treat two people differently when there is no relevant difference between them. As an extreme case, it would be very odd for a parent to insist on making one child wear size 5 shoes and the other wear size 7 shoes when the children are both size 5.

It should be noted that the Principle of Relevant Difference does allow people to be treated differently. For example, if one employee was a slacker and the other was a very productive worker the boss would be justified in giving only the productive worker a raise. This is because the productive of each is a relevant difference between them. Since it can be reasonable to treat people differently, there will be cases in which some people will be exempt from the usual standards. For example, if it is Bill's turn to cook dinner and Bill is very ill, it would not be a case of Special Pleading if Bill asked to be excused from making dinner (this, of course, assumes that Bill does not accept a standard that requires people to cook dinner regardless of the circumstances). In this case Bill is offering a good reason as to why he should be exempt and, most importantly, it would be a good reason for anyone who was ill and not just Bill.

While determining what counts as a legitimate basis for exemption can be a difficult task, it seems clear that claiming you are exempt because you are you does not provide such a legitimate basis. Thus, unless a clear and relevant justification for exemption can be presented, a person cannot claim to be exempt.

There are cases which are similar to instances of Special Pleading in which a person is offering at least some reason why he should be exempt but the reason is not good enough to warrant the exemption. This could be called "Failed Pleading." For example, a professor may claim to be exempt from helping the rest of the faculty move books to the new department office because it would be beneath his dignity. However, this is not a particularly good reason and would hardly justify his exemption. If it turns out that the real "reason" a person is claiming exemption is that they simply take themselves to be exempt, then they would be committing Special Pleading. Such cases will be fairly common. After all, it is fairly rare for adults to simply claim they are exempt without at least some pretense of justifying the exemption.

Examples of Special Pleading

1. Bill and Jill are married. Both Bill and Jill have put in a full day at the office. Their dog, Rover, has knocked over all the plants in one room and has strewn the dirt all over the carpet. When they return, Bill tells Jill that it is her job to clean up after the dog. When she protests, he says that he has put in a full day at the office and is too tired to clean up after the dog.
2. Jane and Sue share a dorm room.

Jane: "Turn off that stupid stereo, I want to take a nap."

Sue: "Why should I? What are you exhausted or something?"

Jane: "No, I just feel like taking a nap."

Sue: "Well, I feel like playing my stereo."

Jane: "Well, I'm taking my nap. You have to turn your stereo off and that's final."

3. Mike and Barbara share an apartment.

Mike: "Barbara, you've tracked in mud again."

Barbara: "So? It's not my fault."

Mike: "Sure. I suppose it walked in on its own. You made the mess, so you clean it up."

Barbara: "Why?"

Mike: "We agreed that whoever makes a mess has to clean it up. That is fair."

Barbara: "Well, I'm going to watch TV. If you don't like the mud, then you clean it up."

Mike: "Barbara..."

Barbara: "What? I want to watch the show. I don't want to clean up the mud. Like I said, if it bothers you that much, then you should clean it up."

Fallacy: Spotlight

Description of Spotlight

The Spotlight fallacy is committed when a person uncritically assumes that all members or cases of a certain class or type are like those that receive the most attention or coverage in the media. This line of "reasoning" has the following form:

1. Xs with quality Q receive a great deal of attention or coverage in the media.
2. Therefore all Xs have quality Q.

This line of reasoning is fallacious since the mere fact that someone or something attracts the most attention or coverage in the media does not mean that it automatically represents the whole population. For example, suppose a mass murderer from Old Town, Maine received a great deal of attention in the media. It would hardly follow that everyone from the town is a mass murderer.

The Spotlight fallacy derives its name from the fact that receiving a great deal of attention or coverage is often referred to as being in the spotlight. It is similar to Hasty Generalization, Biased Sample and Misleading Vividness because the error being made involves generalizing about a population based on an inadequate or flawed sample.

The Spotlight Fallacy is a very common fallacy. This fallacy most often occurs when people assume that those who receive the most media attention actually represent the groups they belong to. For example, some people began to believe that all those who oppose abortion are willing to gun down doctors in cold blood simply because those incidents received a great deal of media attention. Since the media typically covers people or events that are unusual or exceptional, it is somewhat odd for people to believe that such people or events are representative.

For brief discussions of adequate samples and generalizations, see the entries for Hasty Generalization and Biased Sample.

Examples of Spotlight

1. Bill: "Jane, you say you are a feminist, but you can't be."
Jane: "What! What do you mean? Is this one of your stupid jokes or something?"
Bill: "No, I'm serious. Over the summer I saw feminists appear on several talk shows and news shows and I read about them in the papers. The women were really bitter and said that women were victims of men and needed to be given special compensation. You are always talking about equal rights and forging your own place in the world. So, you can't be a feminist."
Jane: "Bill, there are many types of feminism, not just the brands that get media attention."
Bill: "Oh. Sorry."
 2. Joe: "Man, I'd never want to go to New York. It is all concrete and pollution."
Sam: "Not all of it."
Joe: "Sure it is. Every time I watch the news they are always showing concrete skyscrapers, and lots of pollution."
Sam: "Sure, that is what the news shows, but a lot of New York is farmlands and forest. It is not all New York City, it just receives most of the attention."
 3. Ann: "I'm not letting little Jimmy use his online account anymore!"
Sasha: "Why not? Did he hack into the Pentagon and try to start world war three?"
Ann: "No. Haven't you been watching the news and reading the papers? There are perverts online just waiting to molest kids! You should take away your daughter's account. Why, there must be thousands of sickos out there!"
Sasha: "Really? I thought that there were only a very few cases."
Ann: "I'm not sure of the exact number, but if the media is covering it so much, then most people who are online must be indecent."
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Fallacy: Straw Man

Description of Straw Man

The Straw Man fallacy is committed when a person simply ignores a person's actual position and substitutes a distorted, exaggerated or misrepresented version of that position. This sort of "reasoning" has the following pattern:

1. Person A has position X.
2. Person B presents position Y (which is a distorted version of X).
3. Person B attacks position Y.
4. Therefore X is false/incorrect/flawed.

This sort of "reasoning" is fallacious because attacking a distorted version of a position simply does not constitute an attack on the position itself. One might as well expect an attack on a poor drawing of a person to hurt the person.

Examples of Straw Man

1. Prof. Jones: "The university just cut our yearly budget by \$10,000."
Prof. Smith: "What are we going to do?"
Prof. Brown: "I think we should eliminate one of the teaching assistant positions. That would take care of it."
Prof. Jones: "We could reduce our scheduled raises instead."
Prof. Brown: " I can't understand why you want to bleed us dry like that, Jones."
 2. "Senator Jones says that we should not fund the attack submarine program. I disagree entirely. I can't understand why he wants to leave us defenseless like that."
 3. Bill and Jill are arguing about cleaning out their closets:
Jill: "We should clean out the closets. They are getting a bit messy."
Bill: "Why, we just went through those closets last year. Do we have to clean them out everyday?"
Jill: "I never said anything about cleaning them out every day. You just want to keep all your junk forever, which is just ridiculous."
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Fallacy: Two Wrongs Make a Right

Description of Two Wrongs Make a Right

Two Wrongs Make a Right is a fallacy in which a person "justifies" an action against a person by asserting that the person would do the same thing to him/her, when the action is not necessary to prevent B from doing X to A. This fallacy has the following pattern of "reasoning":

1. It is claimed that person B would do X to person A.
2. It is acceptable for person A to do X to person B (when A's doing X to B is not necessary to prevent B from doing X to A).

This sort of "reasoning" is fallacious because an action that is wrong is wrong even if another person would also do it.

It should be noted that it can be the case that it is not wrong for A to do X to B if X is done to prevent B from doing X to A or if X is done in justified retribution. For example, if Sally is running in the park and Biff tries to attack her, Sally would be justified in attacking Biff to defend herself. As another example, if country A is planning to invade country B in order to enslave the people, then country B would be justified in launching a pre-emptive strike to prevent the invasion.

Examples of Two Wrongs Make a Right

1. Bill has borrowed Jane's expensive pen, but found he didn't return it. He tells himself that it is okay to keep it, since she would have taken his.
 2. Jane: "Did you hear about those terrorists killing those poor people? That sort of killing is just wrong."
Sue: "Those terrorists are justified. After all, their land was taken from them. It is morally right for them to do what they do."
Jane: "Even when they blow up busloads of children?"
Sue: "Yes."
 3. After leaving a store, Jill notices that she has underpaid by \$10. She decides not to return the money to the store because if she had overpaid, they would not have returned the money.
 4. Jill is horrified by the way the state uses capital punishment. Bill says that capital punishment is fine, since those the state kill don't have any qualms about killing others.
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