Critical Thinking Skills Tutorial

Three Common Fallacies

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This Tutorial includes two files:

- **Lesson (38a_Three_Common_Fallacies_Lesson)**

  In order to learn the material presented in this tutorial more effectively, we have created a "notes" section in the exercises file. Take notes for this tutorial by answering the questions listed in the exercises file.

- **Exercises (38b_Three_Common_Fallacies_Exercises** – located in the same area as the lesson)
  - It has highlighted areas for you to take notes and answer the exercises using an application such as Adobe Acrobat Reader.
  - Download and save this file as your own; you will share it with an instructor after you complete the lesson and exercises.

Please contact the Writing Center with any questions or difficulties: csmtwc@smccd.edu or 650-574-6436.

Three Common Fallacies

Note: You will need to read the explanations carefully in order to complete the exercises correctly!

What is a fallacy?

Imagine you have just bought a used car. You are pretty proud of yourself for your purchase since the previous owner sold you the car—a hot pink 1975 Gremlin—for much less than the market value. But, as you are driving to work the next morning with a friend, the car suddenly stalls and a cloud of black smoke comes out of the front hood.

As you stand outside the car and look on in horror at your $300 investment going up in smoke, you ask your friend, who considers himself an expert on auto repair, what he thinks has gone wrong. Your friend quickly comes up with three theories:

> Theory One: "Once I heard about smoke coming from the hood of the car because there was a dead squirrel in the engine. There's probably a dead one in yours."

Does this sound like a good explanation?

Probably not. Just because your friend *once* heard about a dead squirrel causing a car to break down does not mean that is the cause this time. There aren't even any squirrels, dead or alive, in your neighborhood.

> Theory Two: "It's probably because the car is pink! Pink cars break down a lot."

This is even more ridiculous than the last explanation. The color of a car has nothing to do with how often it breaks down.

> Theory Three: "You shouldn't have trusted the person who sold you this car. He had greasy hair."

This does not help either. The person may need to bathe more often, but that has nothing to do with what caused the car to break down.

At this point, you are probably as frustrated with your "auto expert" friend as you are with the car. But while your friend in this scenario may be useless as an auto mechanic, he is giving you examples of exactly what this tutorial is designed to teach you—he is committing **fallacies**, mistakes in reasoning. A fallacy is a claim that may seem *persuasive*, but is not *logical.*

Making claims

We make **claims** whenever we try to understand something—like why a car broke down—or when we try to persuade someone of something—like why your friend should buy the car from you now, or why the guy who sold it to you should be arrested. Often we make good claims that we can support with evidence and explanations, but at other times we—all of us—make mistakes, jump to conclusions, or avoid thinking things through to see that we may be wrong.

When we commit fallacies, we aren't necessarily just being dumb, nor are we trying to lie to anyone: fallacies are often just careless mistakes.

Sometimes it is easy to see when someone is not making good points but hard to explain why. At other times, we get deceived by false claims and end up believing things that probably aren't true.

By knowing the names of some of the most common fallacies, you will be able to quickly identify these mistakes when you hear or read them and, just as importantly, avoid making them yourself. In this tutorial, you will study three of the most common fallacies: false cause, hasty generalizations, and personal attack.

Summary: Before reading the next section and beginning the first exercise, write a **definition of a fallacy** in your own words.

Please open your Three Common Fallacies exercises file and complete this definition in the space provided.

Fallacy #1, False Cause Fallacies: Mistakes in Cause and Effect Reasoning

In the example of your car breaking down, your auto-expert friend came up with an explanation that almost anyone, even someone who knew nothing about cars, could probably see is not very logical: "It is because the car is pink!"

The reason the explanation is so weak is that it does not identify a real cause: cars do not break down because of what color they are. A pink car may be in bad taste, but it is no more likely to break down than a yellow or green or maroon car.

This is an example of a false cause fallacy: it makes a claim about cause and effect, but the cause is really not connected to the effect.

A few more examples and explanations should help clarify this fallacy:

- Bob: "On the day of my algebra test I wore my purple Spiderman tee shirt, and then I got an 'A' on the test. I'm going to wear that shirt every time I take a test from now on!"

Explanation: Bob assumes that the tee shirt *caused* him to get an A. It is more likely that he just studied hard or understood the material—or that the test was easy.

- Sally: "I drink a lot of water, and I never get sick. If everyone drank three glasses of water a day, we wouldn't need doctors."

Explanation: Sally claims that drinking water is what causes her to be healthy—and it may contribute to her health. But if she never gets sick, she probably has good genes, avoids germs, and takes good care of herself in many ways. If water alone was the cause of good health, many more people would be healthy.

- From a newspaper article: "During the month of December, sales of hot chocolate increased by 10 percent and shopping malls reported an increase in the sale of shoes. Chocolate somehow causes people to want to buy more shoes."

Explanation: People probably drink hot chocolate when it is cold out (as it usually is in December), and they also go inside to shopping malls, where they might buy more shoes. But there is no reason to believe that the chocolate *caused* people to by more shoes.

Note that in many of these examples, the mistake occurs because the speaker assumes that when one thing happened (like getting a good grade on a test) *after* something else happened (wearing a Spiderman shirt), there must be a cause and effect relationship:

- A happened
  then B happened
  So, A must have *caused* B

For example, someone who has never seen an automatic door might make the following argument:

- First I stopped to tie my shoes in front of the door
  then the door opened.
  So, when I tie my shoes, doors automatically open for me. I am a god!

These are silly examples, but false cause fallacies can be more complex and people who are highly intelligent can believe in them. Many superstitions—such as the belief that breaking a mirror leads to seven years of bad luck—probably began as false cause fallacies: Someone who broke a mirror really *did* have bad luck for seven years, and so many people still believe in this today.

In the history of science there are many examples of what turned out to be false cause arguments. In the third century BC, Aristotle saw that maggots came out of pieces of meat left lying in the sun and used this to claim that the maggots were being created spontaneously—the meat was being transformed into maggots all by itself. Today we know that it is the eggs of flies (laid in the meat) that create maggots. Aristotle made a false cause argument because he didn't know better.

Remember also that sometimes causal claims are perfectly good: if there is good reason to believe that A caused B (because B could not be caused by anything else or there is a lot of evidence to support the claim), then the claim may be true.

- The white car slammed into the side of the building even though the driver had braked well ahead of time. However, the roads were wet and there was oil on that section of the road, so the accident is a result of the car sliding on the wet, oily road surface.

Explanation: The writer here gives what seems like a real cause for a car to slide on the road, so this is not a false cause fallacy.

Please open your Three Common Fallacies exercises file and complete exercise 1.

A Special Type of False Cause: Careless use of "because" and "since"

"Because" and "since" both show a cause and effect relationship: I am tired because I was up all night.

However, in speech, many people use the word "because" to connect their thoughts, even if there is no cause and effect relationship. When you are talking, you may say something like "I'm tired because I'm going to bed" and few people will notice.

In writing and in more formal speech, however, you will need to be very clear about what you mean. A reader usually cannot ask for clarification. The words "because" and "since both mean "for this reason." They should come immediately *before* the reason, before the cause, not before the effect. For example: "It is raining because the roads are wet" does not really make sense if you think about it. The correct order is "The roads are wet because it is raining."

Please open your Three Common Fallacies exercises file and complete exercise 2.

Fallacy #2 :Hasty Generalizations, or Leaping to Conclusions

A hasty generalization is another common fallacy that is somewhat similar to a false cause. In this fallacy, the speaker or writer makes a claim about cause and effect but

- has not carefully thought about whether other causes might be the real reason **or**
- has not provided enough information to show that this really is the cause.

In the example at the beginning of this tutorial, your friend the auto expert came up with a simple theory to explain why your car had black smoke coming out of the hood: "Once I heard about smoke coming from the hood of the car because there was a dead squirrel in the engine. There is probably a dead one in yours." This is not necessarily a *false* cause—maybe there *is* a dead squirrel in your engine. But should you believe that is the reason, without even checking your engine, just because your friend heard *one example* like that?

A hasty generalization makes a claim without carefully examining evidence—the speaker or writer jumps to a conclusion.

- Mrs. Simmoni brought home a stray dog who seemed friendly, but when she left for the evening, she returned home to find that the dog had eaten her pet cat, Fluffy. She concluded that, "all dogs are vicious killers! They always eat cats!"

Explanation: one dog ate one unfortunate cat, but this does not mean that all dogs eat all cats.

- My next door neighbor left his car unlocked with a bag of groceries in it and someone stole the groceries. You can't trust anyone anymore.

Explanation: One incident of stolen groceries is not enough to support the claim that you "can't trust anyone."

Sometimes hasty generalizations come in the form of studies that make a claim about a large population based on a very small sample:

- A survey of students at Lemore High School found that nearly 80 percent smoke cigarettes. This shows that young people in the U.S. are smoking more than ever.

Explanation: Students at one high school are not a big enough population to reach a conclusion about smoking for young people in the entire country.

In all of these examples, the sample is too small for the conclusion:

- A certain percentage of As are Bs
  Therefore all As are Bs.

  One dog ate my cat; therefore, all dogs eat cats. One group of students smoke cigarettes; therefore, all young people smoke cigarettes. In these examples, the number of "As" is not big enough to support the conclusion.

Remember that not all generalizations are hasty. We often make generalizations based on extensive experience or a very large sample.

- A survey of 10,000 adults throughout the United States showed that 98 percent believed there is too much sex and violence on television. The adults were selected from around the country and represented different age groups, religious backgrounds, and political beliefs. This suggests that the majority of Americans think there is too much sex and violence on television.

Explanation: Note that here, the writer is careful to pick a large sample of people and explain that the sample is varied before reaching a conclusion.

Please open your Three Common Fallacies exercises file and complete exercise 3.

Fallacy #3: Getting Personal: The Personal Attack Fallacy

To return once more to your auto-expert friend in the first example, the final theory he offered for why your car broke down is "The person who sold it to you has greasy hair!" You may be tempted to agree with your friend on this: the guy who sold you the car may need to bathe a bit more.

But, of course, that has nothing to do with what you are trying to figure out when you are standing by the road watching your beautiful Gremlin go up in smoke. The question you are asking is: "What's wrong with this car?" If the answer is not about the car, it is not an answer at all. In this case, your friend is attacking the person who sold it to you instead.

The personal attack is one of the most common fallacies. You have almost certainly experienced it yourself. If you have had an argument about whose turn it is to wash the dishes tonight that soon became about why you are so lazy and such an ungrateful son/daughter/parent/spouse, you've been the victim of a personal attack. Many arguments that start out as simple factual disputes about who starred in what movie or how to get to the store become heated emotional debates because we feel we are being personally attacked.

Examples:

- The President is obviously lying. Sally does not think so, but Sally trusts everyone.

Explanation: The writer doesn't support the claim that the President is lying with any evidence but focuses instead on attacking Sally.

- During a debate about the legalization of marijuana: "Bob says that marijuana should be kept illegal but he admits he has smoked it himself. That proves that keeping it illegal makes no sense."

Explanation: Even if Bob has smoked marijuana, that does not mean that the arguments he has given for keeping it illegal are wrong.

As with the other fallacies we have discussed, you have to be careful with this one. Sometimes the character of a person making an argument really is the issue. At other times, the character of the person making an argument should make us suspicious about his or her claims.

- You say you want to work in a bank, but you admit on your resume that you have had no experience with banks except for robbing them. I think you are probably not the best person for the job.

Explanation: If the question here is whether the bank should hire you, your personal experience and character are important. Though your character is being criticized, the criticism is relevant to the issue, so this is not really a fallacy.

- Martin, a representative from Americans for Sound Science, claims, "There is no evidence linking smoking cigarettes to lung cancer or emphysema," but Martin's group, Americans for Sound Science, is actually a group funded by several tobacco companies who have a long history of publishing false information about smoking. Virtually all scientists who study cancer and emphysema—except a few who work for tobacco companies—agree that tobacco is linked to these diseases.

Explanation: Martin might complain that he, or at least his organization, is being attacked here, but there is good reason to be suspicious of an organization that has been caught lying in the past and that stands to make a lot of money from doing so. While this *is* an attack on the person, the attack is relevant to the issue being discussed. Most people would not view this as a fallacy.

Please open your Three Common Fallacies exercises file and complete exercise 4.

Final Review

A Short Summary

A **fallacy** is a claim that may seem *persuasive*, but is not *logical.* Sometimes writers (and speakers) intentionally mislead their audiences, but fallacies may also be unintentional.

In this tutorial, you have learned about three common fallacies:

False cause is a fallacy where the writer or speaker mistakes cause and effect, often by assuming that because one thing happened, then something else happened; the first must have caused the second:

> Paris Hilton bought a chihuahua.
> Paris Hilton went to jail.
> Conclusion: chihuahuas must be illegal!

This is a fallacy because it is not the chihuahua that caused Paris Hilton to go to jail—she deserved to go to jail for some other reason.

Remember that students often unintentionally commit this fallacy when they use the word "because" carelessly. Someone who writes, "I am tired because I need coffee" probably means, "I need coffee because I am tired."

You may find a **hasty generalization** if someone makes a big conclusion based on a very small example:

> Two of my friends cheated in high school.
> Everyone cheats in high school.

Maybe everyone does, but you need a much, much bigger example than two of your friends to prove it.

Finally, look out for the **personal attack** when someone avoids discussing an actual issue and instead focuses on the person who is bringing up the issue:

> Sally's mother: You promised to do the dishes and you haven't done them.
>
> Sally: Mom! You're a crack addict!

Sally's mom may or may not be a crack addict, but that has nothing to do with whether Sally should do the dishes or not.

Please open your Three Common Fallacies exercises file and complete exercise 5.

Final Activity

Instructions:

1. Now that you have completed the lesson and exercises for this tutorial, please share your tutorial exercise answers with the Writing Center, either by emailing them to csmtwc@smccd.edu or by stopping by room 18- 104.
2. The Instructional Aide will review your exercises and give you the Exit Quiz. If you pass the quiz, the Instructional Aide will give you credit for this tutorial. If you do not pass the quiz, you will need to make an appointment to meet with a Writing Center Instructor. To make this appointment, sign up using the same method you use to make essay conference appointments. Be sure to include a comment or note that you are meeting about a tutorial.
3. During this appointment, the instructor will make sure you understand the concepts covered in this tutorial, answer any questions that you might have, review answers to the exercises, and quiz. The instructor will then give you credit for completing this tutorial.