

8 – THE TWISTED THINKING OF LOGICAL FALLACIES (CHAPTER 5)

Overview Statement: To be good critical thinkers, leaders must study logical fallacies, both so they can avoid using them and spot them in others.

Connection to the Curriculum: Ties in with a central theme of chapter five in *Learn to Lead*, Team Leadership.

Estimated Time: 25-30 Minutes

Resources Required: *Learn to Lead*, Module Two; Whiteboard (or chalkboard, butcher paper or easel pad).

Key Term:

Logical Fallacy – “An error of reasoning.” *Learn to Lead*, Module Two

INTRODUCTION

Attention: Is it possible for $2 + 2$ to NOT equal four?

Motivation: Our quick answer is no; $2 + 2 = 4$. However, advanced math students know that the answer is something else if using a different base system, like binary. Faulty logic often gets in the way of knowing the truth.

Overview: In this lesson we will expose some of the most common logical fallacies that are used to confuse reasoned thinking.

Your role in this discussion is to be an active participant. You are free to share your views with each other. Please be involved and considerate of one another. My role will be to take notes on what you say, and I may occasionally ask a question or two. There are no right or wrong answers to the questions. I am simply interested in what you have to say.

MAIN POINT: COMMON LOGICAL FALLACIES

A logical fallacy is an error of reasoning. When someone makes an argument based on bad reasoning, they are said to commit a fallacy. Weak, twisted, fallacious thinking keeps us from knowing the truth.

Fallacies are so common (even among the brightest minds) that philosophers have been able to define these recurring mistakes and give each a name. Here are ten of the most common logical fallacies:

{Draw the following on the board:

Fallacy	Examples	Counter
Ad Hominem		
Appeal to Authority		
Post Hoc		
Appeal to Tradition		
Red Herring		
Weak Analogy		
Straw Man		
Circular Argument		
False Dilemma		
Slippery Slope		

Read the definition of each fallacy, give an example or two, then allow the cadets to come up with their own examples. Ask them to brain-storm ways to counter such faulty thinking and write their responses on the board. Some anticipated responses are listed below, but they should not be considered the only answers.}

Review:

Note: These explanations have been simplified, but are accurate enough for our purposes.

Ad Hominem ~ (Latin, literally “to the man”). Have you ever seen someone who is losing an argument make a personal attack on their opponent? That’s an ad hominem attack. Instead of focusing on the logic of an opposing argument, an ad hominem attacks the other person. In addition to being logical fallacies, ad hominem are simply rude.

EXAMPLES:

- What can our new math teacher know? Have you seen how fat she is?
- “So I’m ugly. So what? I never seen anyone hit with his face.” (Baseball great Yogi Berra, in response to an ad hominem)

COUNTER: Attack the argument, not the arguer.

Appeal to Authority ~ Perhaps the weakest of all fallacies, an appeal to authority tries to prove a claim by asserting that some smart person believes the claim to be true and therefore it must be true. Anyone who has ever spent time on the playground has seen kids try to win arguments with the devastating, “Ya-huh! My big brother said so!”

EXAMPLES:

- “The purpose of the Cadet Program is to prepare youth for Air Force Basic Military Training.” REPLY: “This is true because I heard it from the Wing Commander.”
- “I admire the president for being a good role model.” REPLY: “But the New York Times says he’s a lousy role model, so you’re wrong.”

COUNTER: Just because someone is in a position of authority, does not mean that they are always right.

Post Hoc ~ Post hoc ergo propter hoc (Latin: After this, therefore because of this). Something happens and then something else happens. Does that mean that the first thing caused the second? Not necessarily. The post hoc fallacy illustrates the difference between correlation (two things being related somehow) and causation (one event causing another event, like a chain reaction).

EXAMPLES:

- Shortly after MySpace became popular, U.S. soldiers found Saddam Hussein.
- Michael Jackson, Kurt Cobain, and Jimi Hendrix were rock stars who died young. Therefore, if you become a rock star, don’t expect to live a long life.

COUNTER: Learn to tell the difference between correlation and causation.

Appeal to Tradition ~ The “we’ve always done it that way” response. One of the quickest ways to lose credibility as a leader is to commit the fallacy of the appeal to tradition. This fallacy makes the assumption that older ideas are better, and that the leader’s job is to prevent change.

EXAMPLES:

- If we allow cadets to apply for encampment online, we’d save everyone lots of headaches. REPLY: No. We’ve always made cadets apply using a paper form.
- We should offer movies on our company’s website. REPLY: No, we’ve built our company’s fortune by renting movies only through our stores.

COUNTER: People using this argument are typically resistant to change. Show how the change is actually better than not changing.

Red Herring ~ One of the most seductive fallacies, the red herring is a distraction. And while a given line of thought may indeed be true, it is a red herring if it is not relevant to the issue at hand. Their truthfulness makes red herrings particular effective at derailing someone's successful argument.

EXAMPLES:

- We should present Cadet Curry with our squadron's cadet of the year award. He's the most active and highest-performing cadet we have. REPLY: But Cadet Arnold has been in CAP longer.
- I know you want to imprison me for having murdered my parents, but judge, have mercy on me, I'm an orphan!

COUNTER: Ask the arguer how their statement is relevant to yours or makes your statement less true.

Weak Analogy ~ Comparing "apples and oranges." People often make analogies or comparisons. They see how one situation or one thing is similar to another, and indeed they are. But the fallacy of the weak analogy arises because no matter how similar two things are, they are never exactly alike, and therefore, the argument breaks down.

EXAMPLES:

- Hybrid cars are like solar power, full of promise but too expensive. We'll never be able to build affordable hybrid cars.
- Encampment is like basic training. It's CAP's equivalent to Boot Camp.

COUNTER: Point out that the similarity is not really similar at all.

Straw Man ~ Some shrink from a fair quest for the truth by setting up a straw man argument. Instead of attacking the opposition head-on, a straw man fallacy misrepresents the opposing position, making it seem weaker than it is.

EXAMPLES:

- We should prohibit all cadets from assisting on emergency services missions. Some cadets are so immature they won't ever stop goofing around.
- Senator Curry is against the new F-99 laser fighter. I'm for it because I don't want to leave America defenseless.

COUNTER: Attack the lack of a skeleton to the argument (Most cadets behave professionally on missions; America still has a strong defense even without a particular aircraft).

Circular Argument ~ If your argument's conclusion is the same as one of your premises, you're begging the question. Your reasoning is running in circles. The only people likely to be persuaded by circular reasoning are those who already agree with the original premise. When someone tries to support a statement by restating it again and again, they are said to be begging the question or using circular reasoning.

EXAMPLES:

- "You can't give me a C. I'm an A student!"
- "Honesty is defined as always being honest."

COUNTER: Point out that the conclusion does not make sense. Ask for clarification.

False Dilemma ~ The premise behind the false dilemma is that we are faced with two, but only two choices, and both are not very good. It's an "either/or" situation; you can have either X or Y, but not both, and you certainly cannot have Z. This fallacy often arises because of the inability to think creatively and see an acceptable third way to a solution.

EXAMPLES:

- "Are you going to do well in school, or are you going to succeed as a cadet?"
- "We can give cadets awards for doing well, or we can have a disciplined squadron. We can't do both."

COUNTER: Reject the dilemma outright.

Slippery Slope ~ If the idea that one thing leads to another is fixed in your mind, you may travel down the slippery slope. Pull the trigger, and the gun fires. Indeed, one thing is apt to cause another, but in critical thinking, causation must be shown, it cannot be assumed.

EXAMPLES:

- Major in English in college, start reading poetry, and next thing you know, you will become an unemployed pot-smoking loser.
- Never be kind and generous to the poor. They'll come to expect your help always and never learn to contribute to society.

COUNTER: Be critical and decide if you are acting based upon a fact or an assumption.

{If time allows, ask the following follow-up questions:}

Question: Is it possible to win the argument but lose the debate? Defend your answer.

Question: How can you influence your leaders to stop making logical fallacies?

CONCLUSION

Summary: A logical fallacy is a mistake in logic; bad reasoning that corrupts the correct line of thought.

Remotivation: Have you noticed that many of the fallacies described above seem so familiar. That fact shows the need for every leader to be familiar with the most common fallacies.

Closure: Those who search for the truth need to be on guard against logical fallacies, both in their own arguments and in the arguments of others.

SUGGESTED ACTIVITIES

Note to the instructor: Every informal discussion should be followed by one or more hands-on activities that reinforce one or more of the concepts being discussed. These activities should last 25-30 minutes, giving about one hour total block of time for the leadership session at a typical CAP meeting (25-30 minutes for the informal discussion, plus 25-30 minutes for the activities).

Along with any questions found in the activities themselves, you should be sure to ask, “**How does this activity tie in with our discussion?**”

CAP recommends activities from the *Learn to Lead Activity Guide* by Rob Smith (published by the Civil Air Patrol). You are free to substitute another activity, or create your own, as long as you tie in with one or more concepts of the informal discussion.

Main concept for this lesson: **Errors in logic; faulty thinking.**