

Definitions

- **Logic** is the study of the methods and principles of reasoning.
- An **argument** uses a set of facts or assumptions, called **premises**, to support a **conclusion**.
- A **fallacy** is a deceptive argument—an argument in which the conclusion is not well supported by the premises.

Fallacy Structures

Appeal to Popularity

Many people believe p is true; therefore... p is true.

False Cause

A came before B ; therefore... A caused B .

Appeal to Ignorance

There is no proof that p is true; therefore... p is false.

Hasty Generalization

A and B are linked one or a few times; therefore... A causes B (or vice versa).

Fallacy Structures

Limited Choice

p is false; therefore...only q can be true.

Appeal to Emotion

p is associated with a positive emotional response; therefore...
 p is true.

Personal Attack

I have a problem with the person or group claiming p ; therefore...
 p is not true.

Circular Reasoning

p is true. p is restated in different words. (The argument states the conclusion.)

Fallacy Structures

Diversion (Red Herring) p is related to q and I have an argument concerning q ;
therefore... p is true.

Straw Man I have an argument concerning a distorted version of p ;
therefore...I hope you are fooled into concluding I have an argument concerning the real version of p .

Example

- I placed the quartz crystal on my forehead, and in five minutes my headache was gone. The crystal made my headache go away.
- False Cause

Example

- Ford Makes the best pickup trucks in the world.
After all, more people drive Ford pickups than any other light truck.
- Appeal to Popularity

Example

- Society has an obligation to shelter the homeless because the needy have a right to the resources of the community.
- Circular Reasoning

Example

- Two cases of childhood leukemia have occurred along the street where the high-voltage power lines run. The power lines must be the cause of these illnesses.
- Hasty Generalization

Example

- Scientists have not found any concrete evidence of aliens visiting Earth. Therefore anyone who claims to have seen a UFO must be hallucinating.
- Appeal to ignorance

Example

- You don't support the President, so you are not a patriotic American.
- Limited Choice

Example

- In a commercial for Michelin tires, a picture of a baby is shown with the words “because so much is riding on your tires.”
- Appeal to Emotion

Example

- We should not continue to fund cloning research because there are so many ethical issues involved. Ethics is at the heart of our society, and we cannot afford to have too many ethical loose ends.
- Diversion

Example

- The mayor of a large city has proposed decriminalizing drug possession in order to reduce overcrowding in jails. His challenger in the upcoming election says, “The mayor doesn’t think there’s anything wrong with drug use but I do.”
- Straw Man

Example

- If the Senator doesn't have any religious affiliation, then he can't have the personal values required to represent me.
- Personal Attack