
A refutation is a criticism of an argument within the opposing speech. To do this effectively, you need to recount briefly the opposing argument and then offer a refutation of some aspect of the argument. Although some suggestions on how to conceive of a refutation were given in the *Basic Refutations and POIs* document, there are additional--more advanced--ways to do this effectively. What follows are Eight more ways to create refutations, which are drawn from the tradition of logical fallacies.

1. Is the speaker *distorting your argument*? A speaker will sometimes refute your argument by oversimplifying, exaggerating, or misrepresenting your original argument. This error in reasoning is traditionally called the *Straw Man* fallacy because the content of refutation is not the same as the content of your original argument, so it is empty or ‘made of straw’, one could say.

For example, you claim that industrialization is the cause of global warming. In response, the opposing side refutes the claim by stating that industrialization is the cause of all ills that beset people.

In the example, the refutation modifies the context of ‘industrialization’ by focusing on ‘all ills’ instead of your original focus on the theme of ‘global warming’. This is a modification that distorts the intended usage of the word ‘industrialization’, so one could say that the refutation is ‘made of straw’.

Sometimes, the *Straw Man* fallacy occurs when the other side modifies the inference that you are making from your evidence.

For example, you claim that *Calgary is a great place to find employment*. To support this claim, you provide evidence that shows that *Calgary is the fastest growing city in Canada* because you reasonably infer that fast growth also means increased employment opportunities. In response, the other side refutes your argument by stating that *Calgary is not the biggest city in Canada*.

In this example, the refutation conflates the idea of rate of population *growth* with the idea of the *biggest* population, which are of course not the same, so one could refute the refutation by saying that it is ‘made of straw’.

2. Is the speaker diverting your attention? Sometimes, a speaker will try to divert your attention from the original issue by introducing an unrelated topic or perspective. This error in reasoning is called a **Red Herring** fallacy because, apparently, dead herrings, which have a pungent smell, were dragged across the path to distract hunting dogs from following a scent.

For example, you claim that *the level of mercury in seafood is becoming unsafe*. To refute the claim, the opposing side states that *some families need to fish to support their families*.

Although this is true, it is unrelated logically because you are viewing fish consumption from a health perspective, but the other side is viewing it from an economic perspective. Let's consider another example.

You argue that "Ukraine needs to do more to eliminate business corruption in their country before they can join the EU." The opposing side refutes this argument by saying that "The real problem is that Ukraine lacks economic growth."

Although it is true that Ukraine needs to increase economic growth, it is a red herring fallacy because the initial claim focuses on corruption and not economic growth. Let's consider a final example.

You argue that "Students have the right to protest against the expansion of pipelines in Canada because more pipelines will lead to increased global warming." In response, the opposing side states that "Students should be grateful to protest on university campuses for such a long time because it is very disruptive."

In this refutation, the opposing side creates a Red Herring fallacy because the refutation diverts the attention away from the original argument, which was about protesting pipeline expansion because of global warming.

3. Is the speaker making a wrong logical conclusion? If a speaker states that there is a causal relationship between two events where there is none, the speaker is making a **Non Sequitur** fallacy. For instance, "She drives a nice car, so she must be wealthy" is a non sequitur because driving a nice car may mean the person is wealthy, but it is not always true. Also, consider the statement, "We can send a man to the moon, so we can surely cure the common cold," which is a non sequitur because moon travel and curing infections are unrelated problems.

Now consider a more complex example in which a senior politician is responsible for managing immigration from Central America into the United States. When asked whether she has been to the border, she replied,

"I have not been to the border, but I have also not been to Europe, yet I know something about Europe, so why should you assume that I know nothing about the border?"

Her response is a non-sequitur because knowing about Europe is a different body of knowledge than knowing about how to manage immigration from Central America into the United States. Because the knowledge is very different, there is no causal relationship between a general knowledge of Europe and a specific knowledge of Immigration from Central America. Also, the conclusion is flawed because the speaker assumes that knowledge of a place is the same as seeing the place herself.

4. **Is the speaker making a wrong sequential conclusion?** When one event follows another, it is wrong for a speaker to assume that the first event caused the second. Consider the following simple example. "I wore my lucky socks to the game, and we won, so my socks caused the victory." Although there is a *sequential* relationship between the lucky socks and winning the game, there is no *causal* relationship. To believe otherwise means that you are committing a **Post Hoc** fallacy. Consider the following more complex example.

A speaker argues that employment increased in the fourth quarter because the government eliminated the gasoline tax in the second quarter.

In this example, the elimination of the gas tax may have caused an increase in employment, but you can refute the argument by saying that other factors need consideration, such as a drop in interest rates, the development of new products, and new international trade agreements. Only when these factors, and perhaps others, are eliminated can one conclude that the drop in a gasoline tax caused the rise in employment.

5. **Is the speaker assuming unfavorable outcomes?** Sometimes, the speaker claims that accepting the resolution will inevitably lead to an undesirable outcome or series of outcomes. However, you can refute this claim because you believe that safeguards can be put in place to avoid an undesirable outcome. When you make this refutation, you are in fact accusing the speaker of making a **Slippery Slope** fallacy. Consider the following example in which you make the following argument.

Canada should build another oil pipeline from Fort McMurray to Burnaby to increase oil production because Canada's prosperity has been falling for the last 10 years. If

we don't increase our prosperity, we will not have enough money to pay for education, health care, the police and other social services.

In response, the other side refutes your argument by saying that "building another oil pipeline will only lead to the building of more pipelines in the future." In response, you could defend your argument, which is in fact refuting the refutation, by saying that the decision to build this pipeline is not based on the building of a previous pipeline. It is rather based on the need to increase Canada's prosperity.

The above example was based on a **causal relationship** because it is assumed that building one pipeline will cause the building of another pipeline in the future. However, another form of Slippery Slope fallacy is based on **precedent relationship**. Consider the following example.

You argue that teachers should give an extension on an assignment when a student is preparing for a job interview because applying for a job is a valuable educational skill that needs to be encouraged and that influences a student's future success.

In response, you refute this argument by saying that we should not give extensions for job interviews because we will then have to give extensions for other reasons, such as family gatherings or going on holidays. In response to this refutation, you could accuse the other side of making a slippery slope fallacy because one should not assume that a teacher lacks free will to place a restriction at any time on the reason for an extension.

A final form of the Slippery Slope fallacy is based on a **conceptual relationship**. Consider the following argument.

"Social media algorithms are helpful because they customize content for the consumer, which more closely meets the needs of the consumer."

The other side refutes the claim by saying that 'social media algorithms are harmful because they often lead viewers to feel fear and envy by providing a series of images and narratives that remind the viewers that they are not attractive enough, social enough or successful enough. Furthermore, 22% of young women are seriously affected by this, so if we continue to allow social media algorithms in society, they will eventually negatively impact every young person'. In response to this argument, you could accuse the other side of making a slippery slope fallacy because there is no reason to believe that everyone will be adversely affected, for nearly 80% of young

people do not have an adverse reaction to social media, so there must be something else, like a lack of parental guidance or an unhealthy self-esteem, that is causing an adverse reaction among some young viewers.

6. Is the speaker **using circular reasoning**? This logical fallacy, which is sometimes called **Begging the Question**, occurs when the speaker says that A is true by referring to B and then says that B is true by referring to A. Consider the following example that describes the dependency relationship between a small business and a thriving greater economy.

The stimulation and employment that small businesses provide is necessary to make a thriving economy, but a successful economy is necessary for entrepreneurs and new small businesses to survive.

In this example, the speaker claims that A) the economy requires small business and entrepreneurs to be successful because B) they provide stimulation to the economy, but he (she) then says that B) a thriving economy is necessary A) for small businesses to succeed.

Here is another, more abstract, example by Rene Descartes, who famously taught that using the Bible to prove the existence of God is a circular argument.

We justify our belief in the Bible because it is the word of God, and our belief in God's existence is justified because it is written in the Bible.

In this example, Descartes demonstrates circular reasoning when he states that (A) "we justify our belief in the Bible" because it is the (B) "word of God," and we justify (B) "our belief in God's existence" because it is (A) "written in the Bible." Please note that when you debate, you should avoid referring to the Bible, or any religious text, to support an argument because the proof of God is a circular argument.

7. Is the speaker **modifying or replacing a key word or phrase**? A speaker will sometimes change the meaning of a word in a paragraph to avoid committing to a position. When this is done, the speaker creates an error in reasoning, which is often called the fallacy of **Equivocation**. Consider the following example in which a reporter asks a politician, "Do you support the new law that is being proposed?" The politician replies,

"I think that the new law addresses an important topic, which I am familiar with. It is an important legal statement, which shows that the law is very important.

Furthermore, it is **law** that I care much about, so I will continue to support the **topic** for as long as I am a member of parliament.”

In this example, the politician equivocates by replacing the word “law” with the word “topic,” which creates an error in reasoning because the “topic” of the law is not the same as the law itself.

Consider another example in which a reporter asks a CEO whether the company has paid its taxes. Please note that the CEO creates a fallacy of equivocation by changing the phrasing rather than replacing a word.

“Your company has been accused of using various legal loopholes to avoid paying taxes. Can you say **how much** your company paid in taxes last year?” The CEO replies, “Every year we pay **all** our taxes, and this year is no different, so we paid all the taxes that we owed.”

In this example, the CEO avoids the question of “how much ... in taxes” his company paid last year by saying that he paid “all the taxes,” which is an equivocation because ‘paying all taxes’ is not the same as stating the exact amount of taxes paid.

8. Is the speaker reasoning from parts to whole? During a debate, a speaker will sometimes assume that what is true of the part is true of the whole. To clarify this point, consider the following simple example. “If one runner in a race runs faster, he or she can win. Therefore, if every runner in a race runs faster, they all can win.” Of course, what is good for the part (a singular winner) is not good for the whole (all participants win) because competitions are designed to foster excellence, so there can only be one winner. This error in reasoning, which is often called the fallacy of **Composition**, frequently arises in the context of politics and economics. Consider the following common contexts.

- a) In **Public Voting Theory**, one assumes that the individual voter has good judgement. However, although an individual may have good judgement, one cannot assume that all individuals have good judgement. Therefore, according to the fallacy of composition, what is true of the part, which is the good judgement of an individual, is not always true of the whole because a population does not always elect a good leader.
- b) In the **Division of Labor Strategy**, one assumes that overall productivity increases when individual workers specialize in different jobs. However, people who do the same task day after day often become bored and unproductive, so the overall productivity goes down. In other words, what is considered true of the part, which is the specialized worker, may not be true of the whole because the productivity of the company only increases when people are fully motivated.

- c) In the **Tragedy of the Commons**, one also sees the fallacy of composition. For example, to eliminate hunger in the world, we need to ensure that all people have sufficient food. However, if everyone consumed a shared resource, such as fish from the sea, we would deplete the fish resource because there would simply not be enough fish for everyone. In this regard, what is good for the part, which is feeding each person, is not good for the whole, which is the fish resource.
- d) The **Free Rider Problem** also illustrates the fallacy of composition. For example, if a person chooses not to pay for using the subway, this decision benefits himself because he saves money. However, if there are too many 'free riders', there would be no 'ride' for anyone. In other words, what is good for the part, which is the free rider, is not good for the whole, which is a city that offers a subway service.

9. Is the speaker reasoning from whole to parts. Sometimes, a speaker makes an error in reasoning from the opposite perspective, which is often called the fallacy of **Division**, by assuming that what is good for the whole is good for the parts. Consider the following two simple examples. 1) The human brain is capable of thinking, and neurons are part of the human brain, so each neuron is capable of thinking. 2) The University of Toronto is the highest-ranked university in Canada, and the University of Toronto has a faculty of sociology, so the sociology faculty at the University of Toronto must be the highest-ranked in Canada. Now let's consider a slightly more complex example.

A developer buys four properties for 4 million dollars because he wants to build a store on the property. Because you own one of the four properties, you may conclude that your individual property is worth a million dollars.

In this example, the error of reasoning occurs because the speaker should not assume that each property is worth a quarter of the whole because the whole has value to the developer only as a whole.

10. Is the speaker criticizing the person and not the claim? A speaker in a debate may make an error in reasoning by criticizing an argument based on the quality of the character or the greater context of the evidence. There are two commonly recognized versions of this **ad hominem** fallacy.

- a) The **Hypocrisy** version of this fallacy involves criticizing a policy that is forwarded by a person who has shown bad judgement in another aspect of his (her) life. For example, Ms. Thomson offers a detailed proposal to protect the wetlands. However, she was arrested last year for hunting without a license. Although she has shown bad judgement by hunting without a license, you would be making an error in reasoning if you reject her wetlands proposal because the proposal should be taken on its own merits.

- b) The **Conflict-of-Interest** version involves criticizing a policy because the one presenting the argument appears to be driven by self-interest. For example, the cheese industry has conducted studies that conclude that eating cheese has no adverse effects on heart health. However, you have read papers by independent researchers who have shown that eating cheese is harmful to the heart. Although you suspect that the cheese industry is acting out of self-interest, you are making an error in reasoning if you reject the studies by the cheese industry without evaluating the quality of their research.