

# your logical fallacy is

## So, what is a logical fallacy?

**In short, it's what's often happened when someone is wrong about something.**

In slightly longer than short, it's a flaw in thinking where something doesn't make sense or 'doesn't follow' logically. People will often commit logical fallacies as a way to trick others into believing that they have a good argument when they don't, but with the information in the following pages stored safely in your brain, you will become impervious to such tricks for the rest of your whole entire life!

If you spot someone committing a logical fallacy online, link them to the fallacy they've committed at [www.yourlogicalfallacyis.com](http://www.yourlogicalfallacyis.com), and if you want a free poster with all these fallacies you can download one from the same website.

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## strawman

**You misrepresented someone's argument to make it easier to attack.**

The strawman fallacy belongs to the 'red herring' group of fallacies which are so-named because they have the purpose of 'throwing one off the scent'. By exaggerating, misrepresenting, or just completely fabricating someone's argument, it's much easier to present your own position as being reasonable or valid. This kind of dishonesty not only undermines rational discourse, it also harms your own position because it brings your credibility into question - if you're willing to misrepresent your opponent's argument in the negative, might you also be willing to exaggerate your own in the positive?

**Example: After Will said that we should put more money into health and education, Warren responded by saying that he was surprised that Will hates our country so much that he wants to leave it defenceless by cutting military spending.**

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## false cause

**You presumed that a real or perceived relationship between things means that one is the cause of the other.**

One such mistake in thinking is the 'cum hoc ergo propter hoc' (with this, therefore because of this) fallacy in which someone presumes that because things are happening together that one thing is therefore the cause of the other. The mistake lies in ignoring the possibility that there may be a common cause to both things happening, or, as per the example above, that the two things in question have no causal relationship at all, and their apparent connection is just a coincidence. Another common variation is the 'post hoc ergo propter hoc' (after this, therefore because of this) fallacy in which a causal connection is assumed because one thing happens prior to another thing happening, therefore the second thing must be caused by the first thing.

**Example: Pointing to a fancy chart, Roger shows how temperatures have been rising over the past few centuries, whilst at the same time the numbers of pirates have been decreasing; thus pirates cool the world and global warming is a hoax.**

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## appeal to emotion

**You attempted to manipulate an emotional response in place of a valid or compelling argument.**

Appeals to emotion include appeals to fear, envy, hatred, pity, pride, and more. It's important to note that sometimes a logically coherent argument may inspire emotion or have an emotional aspect, but the problem and fallacy occurs when emotion is used instead of a logical argument, or to obscure the fact that no compelling rational reason exists for one's position. Everyone, bar sociopaths, is affected by emotion, and so appeals to emotion are a very common and effective argument tactic, but they're ultimately flawed, dishonest, and tend to make one's opponents justifiably emotional.

**Example: Luke's didn't want to eat his sheep's brains with chopped liver and brussel sprouts, but his father told him to think about the poor, starving children in a third world country who weren't fortunate enough to have any food at all.**

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## the fallacy fallacy

**Presuming that because a claim has been poorly argued, or a fallacy has been made, that it is necessarily wrong.**

There are few things more frustrating than watching someone poorly argue a position one holds. Much of the time a debate is won not because the victor is right, but because s/he is better at debating than their opponent. If we're to be honest and rational, we must be mindful to not jump to the conclusion that just because someone made a mistake in their defence of an argument, it doesn't necessarily follow that the argument itself is wrong.

**Example: Mr. Moore said that pre-emptively hitting someone was a bad thing to do because you're an idiot, it's natural to be a pacifist, and one time his grandfather, who was a Nazi, hit someone, and won't someone please think of the children?**

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## slippery slope

**You made out like if we allow A to happen, then Z will eventually happen too, therefore A should not happen.**

The problem with this reasoning is that it avoids engaging with the issue at hand, and instead shifts attention to extreme hypotheticals. Because no proof is presented to show that such extreme hypotheticals will in fact occur, this fallacy has the form of an appeal to emotion fallacy by leveraging fear. In effect the argument at hand is unfairly tainted by unsubstantiated conjecture.

**Example: Colin Closet asserts that if we allow same-sex couples to marry, then the next thing we know we'll be allowing people to marry their parents, their cars and Bonobo monkeys.**

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## ad hominem

**You attacked your opponent's character or personal traits instead of engaging with their argument.**

Ad hominem attacks can take the form of overtly attacking somebody, or more subtly casting doubt on their character or personal attributes. The desired result of an ad hom attack is to undermine one's opponent without actually having to engage with their argument or present a compelling argument of one's own.

**Example:** After Sally presents an eloquent and compelling case for a more equitable taxation system, Sam asks the audience whether we should believe anything from a woman who isn't married, was once arrested, and smells a bit weird.

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## tu quoque

**You avoided having to engage with criticism by turning it back on the accuser  
- you answered criticism with criticism.**

Literally translating as 'you too' this fallacy is commonly employed as an effective red herring because it takes the heat off the accused having to defend themselves and shifts the focus back onto the accuser themselves. The implication is that if one's opponent also does the thing that they are accused of, then their opponent is a hypocrite. Irrespective of whether this might be true or not, the problem lies in the fact that it is effectively a tactic to avoid recognising and responding to the criticism of one's argument - by turning it back on the accuser, the accused doesn't need to answer the accusation.

**Example: The blue candidate accused the red candidate of committing the tu quoque fallacy. The red candidate responded by accusing the blue candidate of the same, after which ensued an hour of back and forth criticism with not much progress.**



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## personal incredulity

**Because you found something difficult to understand, or are unaware of how it works, you made out like it's probably not true.**

Complex subjects like biological evolution through natural selection require some amount of understanding of how they work before one is able to properly grasp them; this fallacy is usually used in place of that understanding.

**Example:** Kirk drew a picture of a fish and a human and with effusive disdain asked Richard if he really thought we were stupid enough to believe that a fish somehow turned into a human through just, like, random things happening over time.

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## special pleading

**You moved the goalposts or made up an exception when your claim was shown to be false.**

Humans are funny creatures and have a foolish aversion to being wrong. Rather than appreciate the benefits of being able to change one's mind through better understanding, many will invent ways to cling to old beliefs. One of the most common ways that people do this is to post-rationalize a reason why what they thought to be true must remain to be true. It's usually very easy to find a reason to believe something that suits us, and it requires integrity and genuine honesty with oneself to examine one's own beliefs and motivations without falling into the trap of justifying our existing ways of seeing ourselves and the world around us.

**Example: Edward Johns claimed to be psychic, but when his 'abilities' were tested under proper scientific conditions, they magically disappeared. Edward explained this saying that one had to have faith in his abilities for them to work.**

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## loaded question

**You asked a question that had an assumption built into it so that it couldn't be answered without appearing guilty.**

Loaded question fallacies are particularly effective at derailing rational debates because of their inflammatory nature - the recipient of the loaded question is compelled to defend themselves and may appear flustered or on the back foot. Not only is this fallacy a kind of appeal to emotion, it also insidiously frames the argument in a misleading way, like a pre-emptive strawman fallacy.

**Example: Grace and Helen were both romantically interested in Brad. One day, with Brad sitting within earshot, Grace asked in an inquisitive tone whether Helen was having any problems with a drug habit.**

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## burden of proof

**You said that the burden of proof lies not with the person making the claim, but with someone else to disprove.**

The burden of proof lies with someone who is making a claim, and is not upon anyone else to prove the negative.

The inability, or disinclination, to disprove a claim does not render that claim valid, nor give it any credence whatsoever. The example of not being able to disprove a teapot in orbit serves to illustrate how any claim, no matter how absurd, could be validated if this faulty logic was accepted.

**Example: Bertrand declares that a teapot is, at this very moment, in orbit around the Sun between the Earth and Mars, and that because no one can prove him wrong, his claim is therefore a valid one.**

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## **ambiguity**

**You used a double meaning or ambiguity of language to mislead or misrepresent the truth.**

Politicians are often guilty of using ambiguity to mislead and will later point to how they were technically not outright lying if they come under scrutiny. The reason that it qualifies as a fallacy is that it is intrinsically misleading.

**Example:** When the judge asked the defendant why he hadn't paid his parking fines, he said that he shouldn't have to pay them because the sign said 'Fine for parking here' and so he naturally presumed that it would be fine to park there.

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## the gambler's fallacy

**You said that 'runs' occur to statistically independent phenomena such as roulette wheel spins.**

This commonly believed fallacy can be fairly said to have created an entire city in the desert of Nevada USA.

Though the overall odds of a 'big run' happening may be low, each spin of the wheel is itself entirely independent from the last. So whilst there may be a very small chance that heads will come up 20 times in a row if you flip a coin, the chances of it happening on each individual flip remain 50/50 and isn't influenced by what happened before.

**Example: Red had come up six times in a row on the roulette wheel, so Greg knew that it was close to certain that black would be next up. Suffering a kind of economic form of natural selection with this thinking, he soon lost all of his savings.**

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## **bandwagon**

**You appealed to popularity or the fact that many people do something as an attempted form of validation.**

The flaw in this argument is that the popularity of an idea has absolutely no bearing on its validity. If it did, then the Earth would have made itself flat for most of history to accommodate people's popular belief.

**Example: Shamus pointed a drunken finger at Sean and asked him to explain how so many people could believe in leprechauns if they're only a silly old superstition. Sean, however, had had a few too many Guinness himself and fell off his chair.**

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## appeal to authority

**You used the opinion or position of an authority figure, or institution of authority, in place of an actual argument.**

It is important to note with this fallacy that authorities in given fields may very well have valid arguments, and that one should not dismiss another's experience and expertise; however, to form an argument one must defend it on its merits i.e. know why the person in authority holds the particular position that they do.

It is, of course, entirely possible that the opinion of a person or institution of authority may be entirely wrong; therefore the authority that such a person or institution holds does not have any intrinsic bearing with regard to whether something they say is true or not.

**Example:** Not able to defend his position that evolution 'isn't true' Bob says that he knows a scientist who also questions evolution (and presumably isn't a primate).



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## **composition/division**

**You assumed that one part of something has to be applied to all, or other, parts of it.**

Often when something is true for the part it does also apply to the whole, but the crucial difference is whether there exists good evidence to show that this is the case. Because we observe consistencies in things, our thinking can become biased so that we presume consistency to exist where it does not.

**Example: Daniel was a precocious child and had a liking for logic. He reasoned that atoms are invisible, and that he was made of atoms and therefore invisible too. Unfortunately, despite his thinky skills, he lost the game of hide and go seek.**

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## no true scotsman

**You made what could be called an appeal to purity as a way to dismiss relevant criticisms or flaws of your argument.**

In this form of faulty reasoning one's belief is rendered unfalsifiable because no matter how compelling the evidence is, one simply shifts the goalposts so that it wouldn't apply to a supposedly 'true' example. This kind of post-rationalization is a way of avoiding valid criticisms of one's argument.

**Example: Angus declares that Scotsmen do not put sugar on their porridge, to which Lachlan points out that he is a Scotsman and puts sugar on his porridge. Furious, like a true Scot, Angus yells that no true Scotsman sugars his porridge.**

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## genetic

**You judged something as either good or bad on the basis of where it comes from, or from whom it came.**

This fallacy avoids the argument by shifting focus onto something's or someone's origins. It's similar to an ad hominem fallacy in that it leverages existing negative perceptions to make someone's argument look bad, without actually presenting a case for why the argument itself lacks merit.

**Example: Accused on the 6 o'clock news of corruption and taking bribes, the senator said that we should all be very wary of the things we hear in the media, because we all know how very unreliable the media can be.**

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## **black-or-white**

**You presented two alternative states as the only possibilities, when in fact more possibilities exist.**

Also known as the false dilemma, this insidious tactic has the appearance of forming a logical argument, but under closer scrutiny it becomes evident that there are more possibilities than the either/or choice that is presented. Binary, black-or-white thinking doesn't allow for the many different variables, conditions, and contexts in which there would exist more than just the two possibilities put forth. It frames the argument misleadingly and obscures rational, honest debate.

**Example: Whilst rallying support for his plan to fundamentally undermine citizens' rights, the Supreme Leader told the people they were either on his side, or they were on the side of the enemy.**

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## begging the question

**You presented a circular argument in which the conclusion was included in the premise.**

This logically incoherent argument often arises in situations where people have an assumption that is very ingrained, and therefore taken in their minds as a given. The problem with this way of thinking is that it is internally inconsistent: circular reasoning is bad mostly because it's not very good.

**Example: The word of Zorbo the Great is flawless and perfect. We know this because it says so in The Great and Infallible Book of Zorbo's Best and Most Truest Things that are Definitely True and Should Not Ever Be Questioned.**

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## appeal to nature

**You argued that because something is 'natural' it is therefore valid, justified, inevitable, or ideal.**

Just because something is natural does not mean that it's good. For instance murder is very natural, but most of us agree that we don't think it's a very good thing to be doing, nor does its 'naturalness' constitute any kind of justification for it. Similarly human being have naturally lived for around 30-40 years of age for most of history, but thanks to modern medicine, hygiene, and better understanding of the world around us, we now live for approximately twice as long in developed countries.

**Example: The medicine man rolled into town on his bandwagon offering various natural remedies, such as very special plain water. He said that it was only natural that people should be wary of 'artificial' medicines such as antibiotics.**

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## **anecdotal**

**You used a personal experience or an isolated example instead of a sound argument or compelling evidence.**

It's often much easier for people to believe someone's testimony as opposed to understanding complex data and variation across a continuum. Quantitative scientific measures are almost always more accurate than personal perceptions and experiences, but our inclination is to believe that which is tangible to us, and/or the word of someone we trust over a more 'abstract' statistical reality.

**Example: Jason said that that was all cool and everything, but his grandfather smoked, like, 30 cigarettes a day and lived until 97 - so don't believe everything you read about meta analyses of methodologically sound studies showing proven causal relationships.**

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## the texas sharpshooter

**You cherry-picked a data clusters to suit your argument, or found a pattern to fit a presumption.**

This 'false cause' fallacy is coined after a marksman shooting randomly at barns and then painting bullseye targets around the spot where the most bullet holes appear, making it look appear as if he's a really good shot.

Clusters naturally appear by chance, but don't necessarily indicate that there is a causal relationship.

**Example:** The makers of Sugarette Candy Drinks point to research showing that of the five countries where Sugarette drinks sell the most units, three of them are in the top ten healthiest countries on Earth, therefore Sugarette drinks are healthy.



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## middle ground

**You made out like a compromise, or middle point, between two extremes must be the truth.**

Much of the time the truth does indeed lie between two extreme points, but this can bias our thinking: sometimes a thing is simply untrue and a compromise of it is also untrue. Half way between truth and a lie, is still a lie.

**Example: Holly said that vaccinations caused autism in children, but her scientifically well-read friend Caleb said that this claim had been debunked and proven false. Their friend Alice offered a compromise that maybe vaccinations cause some autism, just not all autism.**