LOGICAL FALLACIES

<https://yourlogicalfallacyis.com/>

1. Strawman :

Misrepresenting someone's argument to make it easier to attack.

* By exaggerating, misrepresenting, or just completely fabricating someone's argument, it's much easier to present your own position as being reasonable, but this kind of dishonesty serves to undermine honest rational debate.

2. False Cause

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

* 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.

3. Appeal to Emotion

Manipulating 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.

4. The Fallacy Fallacy

Presuming that because a claim has been poorly argued, or a fallacy has been made, that the claim itself must be wrong.

* It is entirely possible to make a claim that is false yet argue with logical coherency for that claim, just as it is possible to make a claim that is true and justify it with various fallacies and poor arguments.

5. Slippery Slope

Asserting that if we allow A to happen, then Z will consequently 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.

6. Ad Hominem

Attacking your opponent's character or personal traits in an attempt to undermine their argument.

* Ad hominem attacks can take the form of overtly attacking somebody, or more subtly casting doubt on their character or personal attributes as a way to discredit their argument. The result of an ad hom attack can be to undermine someone's case without actually having to engage with it.

7. Tu Quoque

Avoiding having to engage with criticism by turning it back on the accuser - answering criticism with criticism.

* Pronounced too-kwo-kwee. Literally translating as 'you too' this fallacy is also known as the appeal to hypocrisy. It is commonly employed as an effective red herring because it takes the heat off someone having to defend their argument, and instead shifts the focus back on to the person making the criticism.

8. Personal Incredulity

Saying that because one finds something difficult to understand that it's therefore not true.

* Complex subjects like biological evolution through natural selection require some amount of understanding before one is able to make an informed judgement about the subject at hand; this fallacy is usually used in place of that understanding.

9. Special Pleading

Moving the goalposts or making up exceptions when a claim is shown to be false.

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10. Loaded Question

Asking a question that has a presumption built into it so that it can'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.

11. Burden of Proof

Saying 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 disprove. The inability, or disinclination, to disprove a claim does not render that claim valid, nor give it any credence whatsoever. However it is important to note that we can never be certain of anything, and so we must assign value to any claim based on the available evidence, and to dismiss something on the basis that it hasn't been proven beyond all doubt is also fallacious reasoning.

12. Ambiguity

Using double meanings or ambiguities 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.

13. The Gambler's Fallacy

Believing that 'runs' occur to statistically independent phenomena such as roulette wheel spins.

* This commonly believed fallacy can be said to have helped create 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 heads coming up on each individual flip remain 50/50, and aren't influenced by what happened before.

14. Bandwagon

Appealing 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 this popular belief.

15. Appeal to Authority

Saying that because an authority thinks something, it must therefore be true.

* It's important to note that this fallacy should not be used to dismiss the claims of experts, or scientific consensus. Appeals to authority are not valid arguments, but nor is it reasonable to disregard the claims of experts who have a demonstrated depth of knowledge unless one has a similar level of understanding and/or access to empirical evidence. However, it is entirely possible that the opinion of a person or institution of authority is wrong; therefore the authority that such a person or institution holds does not have any intrinsic bearing upon whether their claims are true or not.

16. Composition/Division

Assuming that what's true about 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, or vice versa, 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.

17. No True Scotsman

Making what could be called an appeal to purity as a way to dismiss relevant criticisms or flaws of an 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.

18. Genetic

Judging something good or bad on the basis of where it comes from, or from whom it comes.

* 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.

19. Black-or-White

Where two alternative states are presented 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.

20. Begging the Question

A circular argument in which the conclusion is 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. Circular reasoning is bad mostly because it's not very good.

21. Appeal to Nature

Making the argument that because something is 'natural' it is therefore valid, justified, inevitable, good, or ideal.

* Many 'natural' things are also considered 'good', and this can bias our thinking; but naturalness itself doesn't make something good or bad. For instance murder could be seen as very natural, but that doesn't mean it's good or justifiable.

22. Anecdotal

Using personal experience or an isolated example instead of a valid argument, especially to dismiss statistics.

* 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.

23. The Texas Sharpshooter

Cherry-picking data clusters to suit an argument, or finding 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 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.

24. Middle Ground

Saying that a compromise, or middle point, between two extremes is 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.

COGNITIVE BIASES

[https://yourbias.is](https://yourbias.is/)

1. Anchoring

The first thing you judge influences your judgement of all that follows.

* Human minds are associative in nature, so the order in which we receive information helps determine the course of our judgments and perceptions. For instance, the first price offered for a used car sets an ‘anchor’ price which will influence how reasonable or unreasonable a counter-offer might seem. Even if we feel like an initial price is far too high, it can make a slightly less-than-reasonable offer seem entirely reasonable in contrast to the anchor price.

2. The Sunk Cost Fallacy

You irrationally cling to things that have already cost you time, money, or effort.

* When we've invested our time, money, or emotion into something, it hurts us to let it go. This aversion to pain can distort our better judgment and cause us to make unwise investments. A sunk cost means that we can't recover it, so it's rational to disregard the cost when evaluating. For instance, if you've spent money on a meal but you only feel like eating half of it, it's irrational to continue to stuff your face just because 'you've already paid for it'; especially considering the fact that you're wasting actual time doing so.

3. The Availability Heuristic

Your judgements are influenced by what springs most easily to mind due to emotional value.

* How recent, emotionally powerful, or unusual your memories are can make them seem more relevant. This, in turn, can cause you to apply them too readily. For instance, when we see news reports about homicides, child abductions, and other terrible crimes it can make us believe that these events are much more common and threatening to us than is actually the case.

4. The Curse of Knowledge

Once you understand something you presume it to be obvious to everyone.

* Things makes sense once they make sense, so it can be hard to remember why they didn't. We build complex networks of understanding and forget how intricate the path to our available knowledge really is. This bias is closely related to the hindsight bias wherein you will tend to believe that an event was predictable all along once it has occurred. We have difficulty reconstructing our own prior mental states of confusion and ignorance once we have clear knowledge.

5. Confirmation Bias

You favor things that confirm your existing beliefs.

* We are primed to see and agree with ideas that fit our preconceptions, and to ignore and dismiss information that conflicts with them. You could say that this is the mother of all biases, as it affects so much of our thinking through motivated reasoning. To help counteract its influence we ought to presume ourselves wrong until proven right.

6. The Dunning-Kruger Effect

The more you know, the less confident about your knowledge you are.

* Because experts know just how much they don't know, they tend to underestimate their ability; but it's easy to be over-confident when you have only a simple idea of how things are. Try not to mistake the cautiousness of experts as a lack of understanding, nor to give much credence to lay-people who appear confident but have only superficial knowledge.

7. Belief Bias

If a conclusion supports your existing beliefs, you’ll rationalize anything that supports it.

* It's difficult for us to set aside our existing beliefs to consider the true merits of an argument. In practice this means that our ideas become impervious to criticism, and are perpetually reinforced. Instead of thinking about our beliefs in terms of 'true or false' it's probably better to think of them in terms of probability. For example we might assign a 95%+ chance that thinking in terms of probability will help us think better, and a less than 1% chance that our existing beliefs have no room for any doubt. Thinking probabalistically forces us to evaluate more rationally.

8. Self-Serving Bias

You believe your failures are due to external factors, yet you’re responsible for your successes.

* Many of us enjoy unearned privileges, luck and advantages that others do not. It's easy to tell ourselves that we deserve these things, whilst blaming circumstance when things don't go our way. Our desire to protect and exalt our own egos is a powerful force in our psychology. Fostering humility can help countermand this tendency, whilst also making us nicer humans.

9. The Backfire Effect

When some aspect of your core beliefs is challenged, it can cause you to believe even more strongly.

* We can experience being wrong about some ideas as an attack upon our very selves, or our tribal identity. This can lead to motivated reasoning which causes a reinforcement of beliefs, despite disconfirming evidence. Recent research shows that the backfire effect certainly doesn't happen all the time. Most people will accept a correction relating to specific facts, however the backfire effect may reinforce a related or 'parent' belief as people attempt to reconcile a new narrative in their understanding.

10. The Barnum Effect

You see personal specifics in vague statements by filling in the gaps.

* Because our minds are given to making connections, it's easy for us to take nebulous statements and find ways to interpret them so that they seem specific and personal. The combination of our egos wanting validation with our strong inclination to see patterns and connections means that when someone is telling us a story about ourselves, we look to find the signal and ignore all the noise.

11. Groupthink

You let the social dynamics of a group situation override the best outcomes.

* Dissent can be uncomfortable and dangerous to one's social standing, and so often the most confident or first voice will determine group decisions. Because of the Dunning-Kruger effect, the most confident voices are also often the most ignorant.

12. Negativity Bias

You allow negative things to disproportionately influence your thinking.

* The pain of loss and hurt are felt more keenly and persistently than the fleeting gratification of pleasant things. We are primed for survival, and our aversion to pain can distort our judgment for a modern world. In an evolutionary context it makes sense for us to be heavily biased to avoid threats, but because this bias affects our judgments in other ways it means we aren't giving enough weight to the positives.

13. Declinism

You remember the past as better than it was, and expect the future to be worse than it likely will be.

* Despite living in the most peaceful and prosperous time in history, many people believe things are getting worse. The 24 hour news cycle, with its reporting of overtly negative and violent events, may account for some of this effect. We can also look to the generally optimistic view of the future in the early 20th century as being shifted to a dystopian and apocalyptic expectation after the world wars, and during the cold war. The greatest tragedy of this bias may be that our collective expectation of decline may contribute to a real-world self-fulfilling prophecy.

14. The Framing Effect

You allow yourself to be unduly influenced by context, delivery, and subtle subliminal clues.

* We all like to think that we think independently, but the truth is that all of us are, in fact, influenced by delivery, framing and subtle cues. This is why the ad industry is a thing, despite almost everyone believing they’re not affected by advertising messages. The phrasing of how a question is posed, such as for a proposed law being voted on, has been shown to have a significant effect on the outcome.

15. Fundamental Attribution Error

You judge others on their character, but yourself on the situation.

* If you haven’t had a good night’s sleep, you know why you’re being a bit slow; but if you observe someone else being slow you don’t have such knowledge and so you might presume them to just be a slow person. Because of this disparity in knowledge we often overemphasize the influence of circumstance for our own failings, as well as underestimating circumstantial factors to explain other people's problems.

16. The Halo Effect

How much you like someone, or how attractive they are, influences your other judgments of them.

* Our judgments are associative and automatic, and so if we want to be objective we need to consciously control for irrelevant influences. This is especially important in a professional setting. Things like attractiveness can unduly influence issues as important as a jury deciding someone's guilt or innocence. If someone is successful or fails in one area, this can also unfairly color our expectations of them in another area.

17. Optimism Bias

You overestimate the likelihood of positive outcomes.

* There can be benefits to a positive attitude, but it's unwise to allow such an attitude to adversely affect our ability to make rational judgments (they're not mutually exclusive). Wishful thinking can be a tragic irony insofar as it can create more negative outcomes, such as in the case of problem gambling.

18. Pessimism Bias

You overestimate the likelihood of negative outcomes.

* Pessimism is often a defense mechanism against disappointment, or it can be the result of depression and anxiety disorders. Pessimists often justify their attitude by saying that they'll either be vindicated or pleasantly surprised, however a pessimistic attitude may also limit potential positive outcomes. It should also be noted that pessimism is something very different to skepticism: the latter is a rational approach that seeks to remain impartial, while the former is an expectation of bad outcomes.

19. Just-World Hypothesis

Your preference for justice makes you presume it exists.

* A world in which people don't always get what they deserve, hard work doesn't always pay off, and injustice happens is an uncomfortable one that threatens our preferred narrative. However, it is also the reality. This bias is often manifest in ideas such as 'what goes around comes around' or an expectation of 'karmic balance', and can also lead to blaming victims of crime and circumstance.

20. In-Group Bias

You unfairly favor those who belong to your group.

* We presume that we're fair and impartial, but the truth is that we automatically favor those who are most like us, or belong to our groups. This blind tribalism has evolved to strengthen social cohesion, however in a modern and multicultural world it can have the opposite effect.

21. The Placebo Effect

If you believe you're taking medicine it can sometimes 'work' even if it's fake.

* The placebo effect can work for stuff that our mind influences (such as pain) but not so much for things like viruses or broken bones. Things like the size and color of pills can have an influence on how strong the effect is and may even result in real physiological outcomes. We can also falsely attribute getting better to an inert substance simply because our immune system has fought off an infection i.e. we would have recovered in the same amount of time anyway.

22. The Bystander Effect

You presume someone else is going to do something in an emergency situation.

* When something terrible is happening in a public setting we can experience a kind of shock and mental paralysis that distracts us from a sense of personal responsibility. The problem is that everyone can experience this sense of deindividuation in a crowd. This same sense of losing our sense of self in a crowd has been linked to violent and anti-social behaviors. Remaining self-aware requires some amount of effortful reflection in group situations.

23. Reactance

You'd rather do the opposite of what someone is trying to make you do.

* When we feel our liberty is being constrained, our inclination is to resist, however in doing so we can over-compensate. While blind conformity is far from an ideal way to approach things, neither is being a knee-jerk contrarian.

24. The Spotlight Effect

You overestimate how much people notice how you look and act.

* Most people are much more concerned about themselves than they are about you. Absent overt prejudices, people generally want to like and get along with you as it gives them validation too. It's healthy to remember that although we're the main character in the story of our own life, everyone else is center-stage in theirs too.

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