

Techniques for Reasoned Debate: Recognizing the Top 20 Logical Fallacies

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Logical fallacies are errors in reasoning, in their basic form. Why is it important to recognize logical fallacies in debate, and to avoid them in your own statements and arguments? Practicing these concepts can improve your critical thinking skills, as well as help you find the truth behind the information you encounter. This can also prove useful during encounters with the occasional spin doctor or word-smith. Fallacies are often propagated by those who argue based on false assumptions or flawed reasoning and/or premises. While we will be discussing some specific errors there are far more types of fallacy than are noted here.

1. **Ad hominem**

- A. Meaning "Against the person"
- B. Reducing the credibility of the opposition by attacking them personally for who they are or actions they've taken and not addressing their arguments or statements.
- C. Because the politicians had an affair, how can we trust their judgment regarding health care reform. (However, the same concerns may be useful in considering their positions on marriage reforms.)

2. **Ad ignorantiam**

- A. Argument to ignorance
- B. This is the fallacy of assuming something is true simply because it hasn't been proven false. Essentially trying to switch the burden of proof to the person that isn't making the claim that requires proof.
- C. Prove that God isn't real, and I'll stop believing.

3. **Argument from authority**

- A. There are many subtypes of the argument from authority relating primarily to source.
Argumentum ad populum – a belief must be true because it is popular. Also **argument from antiquity** – longevity of belief implies truth in this instance.
- B. Stating that a claim is true because a person, group, document or tradition of perceived authority says it is true. While, it is reasonable to give more credence to claims about a topic from those with the proper background, education, and credentials, or to be suspicious of authoritative statements made by someone without proper credentials, the truth of a claim should ultimately rest on logic and evidence, not the authority of the person promoting it.
- C. A doctor claims that MMR vaccines cause more harm than good, despite overwhelming test data to the contrary.

4. **Argument from final Consequences**

- A. An attempt to motivate belief with an appeal either to the good consequences of agreeing/believing or the bad consequences of disagreeing/disbelieving.
- B. Pascal's Wager: (In a nutshell) It is a better idea to believe in God than not to believe, just in case God exists.

5. **Argument from Personal Incredulity**

- A. Believing a concept or process is false, because one can't explain or understand said concept or process.
- B. As an example, arguing that one cannot imagine the complexity of life resulting from evolution, does not preclude evolution as the explanation for the diversity of life.

6. **Confusing association with causation**

- A. Assuming cause and effect for two variables simply because they occur together. Though there may be an association, one must be cautious as to the true nature of the relationship.
- B. Assuming that because church attendance and illegal drug use are on the rise. Then, concluding that one causes the other. This would be a fallacy, as it is equally likely that it is coincidence or a unknown factors are involved.

7. **Confusing currently unexplained with unexplainable**

- A. Failure to produce a sufficient explanation for a process does not make it infinitely unexplainable, nor does it cause it to fail the laws of nature in favor of magical means.
- B. While abiogenesis - the beginning of life on Earth through chemical means - is not fully understood, this gap in our knowledge does not require that life began by some supernatural intervention.

8. **False Continuum**

- A. The false notion that because there is no demarcation between two extremes, that there is no real distinction between the points.
- B. There is a fuzzy line between religious believers and fundamentalist terrorists, therefore they are really the same thing.

9. **False Dichotomy**

- A. Over simplification of a group or continuum of options into merely two choices.
- B. Either a Creator brought the universe into existence, or the universe came into existence out of nothing. (Incidentally, modern theory infers that the something that existed before the rapid expansion that created the universe as we know it may have been around for an extremely long time.)

10. **Inconsistency**

- A. The flip side to cherry picking, or quote mining, **inconsistency** applies rules to one belief, claim, or concept but not to others.
- B. Requiring that a specific creation myth be taught in schools, while advocating that the myths of other cultures should not be taught.

11. **Non-Sequitur**

- A. Meaning "Does not follow"
- B. Simply put, stating, as a conclusion, something that does not strictly follow from the premises of the argument. While all logical fallacies technically fit this category, this title is reserved for those fallacies that defy other classifications.
- C. Buy this widget, and everyone will envy you.

12. **Post-hoc ergo propter hoc**

- A. aka "Fallacy of False Cause" (literally: "after this, therefore because of this")
- B. Assuming that because one thing occurred after another, it must have occurred as a result of it. Chronological order alone, does not provide enough cause.
- C. When I touch my lucky rabbit foot before the game, I win.

13. **Reductio ad absurdum**

- A. Meaning "Reduction to the absurd"
- B. More recently it has been used to to show an abuse of this style of argument by stretching the logic in order to force an absurd conclusion. Not to be confused with the legal definition by the same name.
- C. If you don't believe in unicorns, you must not believe in the pyramids in Egypt, since you have seen neither.

14. **Slippery Slope**

- A. Assumes that one thing must lead to another. The argument begins by suggesting that one thing will lead to another, and another, and before we know it we'll be doing something that we don't want to do.
- B. Legalizing same sex unions will lead to same sex marriages, eventually leading to forced same sex marriages/lessen the sanctity of "traditional" marriages/other crazy impossibilities.

15. **Special pleading, or ad-hoc reasoning**

- A. In essence, trying to fix the results of an argument or test that has already failed by proposing or attempting to introduce new information and arguments to the debate.
- B. The psychic could have provided a better reading had the participants provided better responses to the inquiries posed.

16. Straw Man

- A. Establishing an extremely reduced version of an opponent's argument or position, in an attempt to set oneself up to argue against a more easily defensible position.
- B. Argument 1: *We should reduce the restrictions on fire arms.* Argument 2: *No, a society with unrestricted access to firearms would be a return to the wild west.*

17. Tautology

- A. aka Circular reasoning, "No true Scotsman", others
- B. An argument is circular if its conclusion is among its premises.
- C. A simplified and less graphic telling of "No true Scotsman": **Teacher:** All Scotsmen enjoy haggis. **Student:** My uncle is a Scotsman, and he doesn't like haggis! **Teacher:** Well, all *true* Scotsmen like haggis. Therefore your uncle is no *true* Scotsman.

18. The Moving Goalpost

- A. Changing the criteria required for proof beyond what was required to meet the initially agreed criteria.
- B. Evolution can be accepted as true if transitional fossils can be found. Tiktaalik is presented and verified as a transitional species between water and air breathing animals. A transitional species such as the crocoduck is revealed as the new definition of what is meant by a transitional species. (Apparently archaeopteryx doesn't count.)

19. Tu quoque

- A. Meaning "You too", aka "Two wrongs make a right."
- B. Essentially stating that your error can be overlooked or disregarded, because others have committed the same error.
- C. You can't accuse me of libel because you were just successfully sued for libel.

20. Unstated Major/Minor Premise or Conclusion

- A. These forms of fallacy are displayed by failing to state explicit arguments at the beginning, or conclusions at the end, of an argument. Often when an argument has reached an impasse it is a good idea to re-examine the premises and conclusions for omissions. Often seen as arguing to a predetermined conclusion or begging the question.
- B. Arguing that evolution should find specific transitional species. Assumes 1) specific transitional species exist; 2) specific fossils are in a preserved state; and 3) that the goalpost won't be moved.

My hope is that this discussion will help each of us, in time, to recognize and defuse the fallacies presented by others and allow our own arguments to become devoid of fallacy. Though, I suppose, in the hands of the more devious these tips could allow some to fight fire with fire. Some sources and additional resources have been provided below.

<http://www.nizkor.org/features/fallacies/>

<http://www.logicalfallacies.info/>

<http://en.wikipedia.org/wiki/Fallacy>

http://en.wikipedia.org/wiki/List_of_fallacies

<http://www.unc.edu/depts/wcweb/handouts/fallacies.html>

<http://www.csun.edu/~dgw61315/fallacies.html>

<http://www.theness.com/how-to-argue/>

<http://www.theskepticsguide.org/resources/logicalfallacies.aspx>

<http://leo.stcloudstate.edu/acadwrite/logic.html>

http://en.wikipedia.org/wiki/Pascal%27s_Wager

http://en.wikipedia.org/wiki/Straw_man

http://en.wikipedia.org/wiki/No_true_Scotsman

<http://en.wikipedia.org/wiki/Tiktaalik>

<http://en.wikipedia.org/wiki/Archaeopteryx>

<http://www.youtube.com/watch?v=LNTGmoTb8sw> (Kirk Cameron discusses the Crocoduck with Bill O'Reilly)

http://en.wikipedia.org/wiki/Tu_quoque

<http://www.mrdeity.com>

Special thanks to Wikipedia.com and Google.com for specific examples.