

Definition

Fallacy is the use of invalid or faulty reasoning

Some fallacies are committed intentionally to manipulate or persuade by deception, while others are committed unintentionally due to carelessness or ignorance

Aristotle was the first to systematize logical errors into a list, as being able to refute an opponent's thesis is one way of winning an argument

Richard Whately defines a fallacy broadly as, "any argument, or apparent argument, which professes to be decisive of the matter at hand, while in reality it is not"

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

The first principle is that you must not fool yourself and you are the easiest person to fool, **Richard P. Feynman**

Types of Fallacies

Formal ☞ *An error in logic in the argument's form.*

Non Sequiturs

☞ Propositional fallacies

☞ Quantification fallacies

☞ Syllogistic fallacies

Informal ☞ *Reasons other than structural, require examination of the argument's content*

☞ Faulty generalizations

☞ Red herring fallacies

Conditional or questionable ☹ *Arguments disregard or confusion*

Other systems of classification

The most famous are those of Francis Bacon and J. S. Mill. Bacon divided fallacies into 4 Idola (Idols, False Appearances), summarize the kinds of mistakes the human intellect is prone to.

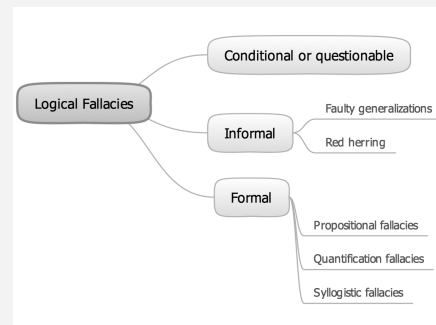
Offendicula of Roger Bacon

Opus maius, J. S. Mill book of his Logic, Jeremy Bentham's Book of Fallacies (1824).

Whately's Logic, A. de Morgan, Formal Logic (1847)

Sidgwick, Fallacies (1883)

Mindmap



Formal fallacies ☞

Appeal to probability	Takes something for granted because it would probably be true, something will go wrong (invalid conclusion)
Argument from fallacy	Aka fallacy fallacy, assumes that if an argument is fallacious argument. Therefore, Q is false



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Formal fallacies § (cont)

Base rate fallacy Making a probability judgment based on conditional probabilities, without taking into account the effect of prior probabilities satisfying multiple conditions. To find the correct answer, one should use Bayes's theorem.

Formal fallacies § (cont)

Masked-man fallacy Substitution of identical designators in a true statement can be fallacious.

Propositional fallacies
A propositional fallacy is an error in logic that concerns compound propositions.



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Formal fallacies § (cont)		Informal Fallacies (cont)	
Affirming a disjunct	Concluding that one disjunct of a logical disjunction must be true because the other is false; if A, then B; B, therefore, A. Max is a mammal. Therefore, Max is not a cat.	Appeal to ignorance. Argument from incredulity. Argument from repetition.	Argumentum ad ignorantiam. It asserts that a proposition is true because the other disjunct is known to have the moral advancement of the other.
Affirming the consequent	The antecedent is claimed to be true because the consequent is true; if A, then B; B, therefore A. If someone owns Fort Knox, s rich. Bill Gates is rich. Therefore, Bill Gates owns Fort Knox.	Argument from incredulity. Argument from repetition.	Appeal to common sense "I cannot imagine how this could be otherwise."
Denying the antecedent	The consequent is claimed to be false because the antecedent is false; if A, then B; not A, therefore not B. If you are a ski instructor, then you have a job. You are not a ski instructor, Therefore, you have no job.	Argument from repetition.	Argumentum ad nauseam; argumentum ad infinitum significationem.
Quantification fallacies		Argument from silence. Argumentum ex silentio. Conclusion is based on the absence of evidence.	
Existential fallacy	An argument that has a universal premise and a particular conclusion. A quantification fallacy is an error in logic where the quantifiers of the premises are in contradiction to the quantifier of the conclusion.	Argument to moderation.	ad temperantiam false compromise, middle ground, fallacy of the mean.
Informal Fallacies		Informal fallacies	
Arguments that are fallacious for reasons other than structural (formal) flaws.		Arguments that are fallacious for reasons other than structural (formal) flaws.	
Appeal to the stone	<i>argumentum ad lapidem</i> Dismissing a claim as absurd without demonstrating proof for its absurdity. A: Infectious diseases are caused by germs. B: What a ridiculous idea! A: How so? B: It's obviously not true.	Argumentum ad absurdum. Argumentum ad nauseam. Argumentum ad infinitum.	See: by verbosity. See: onus probandi. I need not prove my claim, you must.



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Informal Fallacies (cont)		Informal Fallacies (cont)	
Circular reasoning	<i>circulus in demonstrando</i> when the reasoner begins with what he is trying to prove. Double counting	Double counting	Counting events with some reason called as assuming probabilistic reasoning, which leads to the sum of the probabilities of all cases exceeding unity
Circular cause and consequence	The consequence of the phenomenon is claimed to be its root cause. Correlation does not imply causation	Equivocation	Misleading use of a term with more than one meaning <i>Ambiguous middle term</i> a common ambiguity in syllogisms in which the middle term is equivocated <i>Definitional retreat</i> changing the meaning of a word to deal with an objection raised against the original wording.
Continuum fallacy	Improperly rejecting a claim for being imprecise Fred is clean-shaven now. If a person has no beard, one more erefore Fred can never grow a beard		
Correlative-based fallacies	Correlation proves causation <i>post hoc ergo propter hoc</i> a faulty assumption that because there is a correlation between two variables Suppressed correlative where a correlative is redefined so that one alternative is made impossible	Version 1.0 March, 25 2022	
Divine fallacy	Argument from incredulity. Because something is so incredible / amazing / understandable, it must be the result of superior, divine		



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