# FALLACIES

**What is a fallacy?**

There are two ways in which an argument can fail. Firstly, if one of its premisses asserts a false proposition, the argument will fail to establish the truth of the conclusion, even if the reasoning involved is correct. Secondly, the premisses of an argument may in fact fail to support the conclusion. In both these instances we could say that the argument is fallacious. As the term *fallacy* is employed in logic, however, "it designates not any mistaken inference or false belief, but *typical* errors, that is, mistakes, that arise commonly in ordinary discourse, and that devastate the arguments in which they appear."[1] Copi and Cohen elaborate:

> There are many ways in which reasoning can go astray; that is, there are many *kinds* of mistakes in argument. It is customary to reserve the term "fallacy" for arguments that, although incorrect, are psychologically persuasive. Some arguments are so obviously incorrect as to deceive and persuade no one. But fallacies are dangerous because most of us are, at one time or another, fooled by some of them. we therefore define a **fallacy** as **a type of argument that may seem to be correct, but that proves, on examination, not to be so.** It is profitable to study these mistaken arguments because the traps they set can best be avoided when they are well understood. To be forewarned is to be forearmed.[2]

Following Copi and Cohen, we will consider various fallacies under two main headings: *fallacies of relevance* and *fallacies of ambiguity*.

**Fallacies of relevance**

> **When an argument relies on premisses that are not relevant to its conclusion and that therefore cannot possibly establish its truth, the fallacy committed is one of relevance.**[3]

Often the premisses are *psychologically* relevant to the conclusion and so can give the impression to the unwary that they are logically relevant. Hence the seeming correctness and persuasiveness of fallacies of relevance.

*The argument from ignorance: argument* ad ignorantiam

In an argument from ignorance "**it is argued that a proposition is true simply on the basis that it has not been proved false, or that it is false because it has not been proved true.**"[4] A little reflection, however, leads us to see that our inability to prove the truth or falsehood of a proposition does not mean that it is either false or true.

[1] Irving M. Copi and Carl Cohen, *Introduction to Logic* (New Jersey: Prentice-Hall, 1998), 114.
[2] Ibid., 115.
[3] Ibid., 116.
[4] Ibid.

> Famous in the history of science is the argument *ad ignorantiam* given in criticism of Galileo, when he showed leading astronomers of his time the mountains and valleys on the moon that could be seen through his telescope. Some scholars of that age, absolutely convinced that the moon was a perfect sphere … argue against Galileo that, although we see what appear to be mountains and valleys, the moon is in fact a perfect sphere, because all its apparent irregularities are filled in by an invisible crystalline substance. And this could not prove false! Legend has it that Galileo, to expose the argument *ad ignorantiam*, offered another of the same kind as a caricature. Unable to prove the nonexistence of the transparent crystal supposedly filling the valleys, he put forward the equally probable hypothesis that there were, rearing up from the invisible crystalline envelope on the moon, even greater mountain peaks – but made of crystal and thus invisible! And this hypothesis, he pointed out, his critics could not prove false.[5]

*The appeal to inappropriate authority: argument* ad verecundiam

It is entirely appropriate to rely on the authority of experts in particular areas in which we ourselves possess no great competence. There is no problem with invoking such authority. A problem arises, and so the fallacy *ad verecundiam*, "**when the appeal is made to parties having no legitimate claim to authority in the matter at hand.**"[6] Thus, explain Copi and Cohen

> [I]n an argument about morality, an appeal to the opinions of Darwin, a towering authority in biology, would be fallacious, as would be an appeal to the opinions of a great artist, like Picasso, to settle an economic dispute. But care must be taken in determining whose authority is reasonably to be relied on, and whose rejected. While Picasso was not an economist, his judgment might plausibly be given some weight in a dispute pertaining to the economic value of an artistic masterpiece.[7]

The most blatant examples of inappropriate appeal to authority are probably to be found in advertisements. Thus, for example, we are encouraged to buy a particular brand of car because a football star recommends it; we are exhorted to consume a particular kind of food or beverage because a movie star endorses it. As Copi and Cohen put it, "Wherever the truth of some proposition is asserted on the basis of the authority of one who has no special competence in that sphere, the appeal to misplaced authority is the fallacy committed."[8]

In practical terms, we should always ask ourselves whether the person whom we are inclined to cite as an authority really does have the authority we would like to ascribe to him/her and whether that authority is greater than our own in the matter. It is of course always possible that a person who does have a claim to legitimate authority might offer an opinion that subsequently proves to be wrong. To invoke such authority before the opinion is proved wrong is not however to be guilty of an argument *ad verecundiam*.

---

[5] Ibid., 117.
[6] Ibid., 119.
[7] Ibid.
[8] Ibid.

*Complex question*

One of the most frequent fallacies is the complex question which consists in "**asking a question in such a way as to presuppose the truth of some conclusion buried in the question**."[9] By asking a question in this way, the questioner can often achieve his or her purposes surreptitiously – albeit also fallaciously.

> Thus an executive of a utility company may ask, "Why is the private development of resources so much more efficient than any government-owned enterprise?" – assuming the greater efficiency of the private sector. Or a homeowner may ask, regarding a proposed increased in the property tax, "How can you expect the majority of voters, who rent but don't own property and don't have to pay tax, to care if the tax burden of others is made even more unfair?" – assuming that the burden of the proposed tax is unfair, and that those who rent rather than own their own homes are not affected by tax increases on property. But since these assumptions are not openly asserted, the questioners evade the need to defend them forthrightly.[10]

Copi and Cohen offer a dialogue that illustrates the most explicit form a complex question takes: one party asks a complex question, a second party answers it, and the first party then draws a fallacious inference on the basis of the answer:

> LAWYER: The figures seem to indicate that your sales increased as a result of the misleading advertisements. Is that correct?
> WITNES: They did not!
> LAWYER: But you have to admit, then, that your advertising was misleading. How long have you been engaging in practices like these?[11]

It is possible to combine a complex question with an appeal to ignorance, as in the following passage from a scientific journal:

> If Dr. Frankenstein must go on producing his biological monsters … [h]ow can we be sure what would happen once the little beasts escaped from the laboratory?[12]

These kind of fallacious attacks are difficult to deal with as the require that the person to whom they are directed sort out hidden assumptions before a rational response is possible.

*Argument* ad hominem

Literally an argument *ad hominem* means an argument "against the person." it is "**a fallacious attack in which the thrust is directed, not at a conclusion, but at the**

[9] Ibid., 120.
[10] Ibid. 120-21.
[11] Ibid., 121.
[12] Erwin Chargaff, in a letter to *Science* 192 (1976), 938. Quoted in Copi and Cohen, *Introduction*, 122.

**person who asserts or defends it.**"[13] There are two major ways in which this fallacy is committed.

A. Argument *ad hominem*, abusive

In arguments one often hears one party attack the intelligence, reasonableness, integrity, and so on of their interlocutor. The fact is, however, that a person's character is irrelevant to the soundness of the argument he or she is making. To say, for example, that a proposal should be rejected because it is proposed by "radicals" or "extremists" is a typical example of an *ad hominem* argument.

Unfortunately, this kind of argument can all too often be persuasive because of its psychological effects on those listening. When listeners are not sufficiently critical, their emotions can be mobilized in favour of or against a particular point of view.

Even philosophers have been known to commit this kind of fallacy as the following passages illustrate:

> It is one thing to be attacked by an honorable opponent in an honorable way. This happens all the time in philosophy. But in my view Sommer's intellectual methods are dishonest. She ignores the most elementary protocols of philosophical discussion.[14]

Sommers, in turn, replies:

> One dishonest and unworthy tactic used by several of my detractors is to attribute to me complaints I never made and then to dismiss the "complaints" as "irresponsible" and evidence of my reckless unfairness.[15]

Labels often encountered in *ad hominem* arguments include: "right wing," "left wing," "liberal," "conservative," "fundamentalist," and so on.

B. Argument *ad hominem*, circumstantial

In the circumstantial form of the *ad hominem* fallacy, the one committing the fallacy focuses on the circumstances of his or her opponent. The circumstances of one who makes a claim have no bearing on the truth or otherwise of the claim itself.

> In one of the varieties of this form, it is argued fallaciously that *consistency* obliges an opponent to accept (or reject) some conclusion merely because of that person's employment, or nationality, or political affiliation, or other circumstances. It may be unfairly suggested that a clergyman must accept a given proposition because its denial would be incompatible with the Scriptures. Or it may be claimed that political candidates must support a given policy because that policy is explicitly propounded in the platform of their party. Such argument is

[13] Copi and Cohen, *Introduction*, 122.
[14] Sandra Lee Bartky, *Proceedings of the American Philosophical Association* 65 (1992), 56. Copi and Cohen, ibid.
[15] Christina Sommers, *Proceedings of the American Association* 65 (1992), 79. Quoted in Copi and Cohen, *Introduction*, 123.

irrelevant to the *truth* of the proposition in question; it simply urges that some persons' circumstances require its acceptance.

Clearly the circumstantial form of the *ad hominem* argument is a special case of the abuse form. Thus, for example, to accuse someone of *inconsistency* in making a particular argument because of his or her profession or religious creed is a form of abuse. Likewise, to give another example, to say that someone's argument is untrustworthy because he or she belongs to a particular group is a form of abuse.

*Accident and converse accident*

The fallacies of *accident* and *converse accident* involve the use of generalization. "**When we apply a generalization to individual cases that it does not properly govern, we commit the fallacy of *accident.*** When we doe the reverse and, carelessly or by design, **apply a principle that is true of a particular case to the great run of cases, we commit the fallacy of *converse accident.*"**[16]

We would all agree that it is wrong to deceive. But what about someone, say Fritz, in Nazi Germany who was harbouring Jews in order to protect and save them? Some Gestapo officers knock at the door and ask if there are any Jews in hiding there. What should Fritz reply? Should he really tell them the truth that there are Jews in hiding in the basement? Hardly. This would be a fallacy of accident, moving to quickly or carelessly *from* a generalization.

The fallacy of *converse accident* involves moving too quickly or carelessly *to* a generalization. We are all familiar with the way in which all too often generalizations are made about groups of people on the basis of what may be true about a small minority, perhaps only one or two, people who belong to a particular group. In the Western world one might perhaps encounter someone who has been smoking heavily for a long number of years without suffering what are the usual consequences of this harmful and disgusting habit. Such a person might say: "Smoking is not bad for you. Look, I've been smoking thirty cigarettes a day for the last twenty-five years and have had no serious health issues as a result." One cannot move from an isolated exceptional case like this one to a generalized comment.

*False cause*

This fallacy involves **treating something as the cause of something else when in reality it is not the cause**. The most common form this fallacy takes is when it is believed that one thing is cause by another simply because if *follows* it. Temporal succession is no proof of causal succession.

> If an aggressive move in foreign policy is followed by an international event for which we had been hoping, some may mistakenly conclude that the aggressive policy was the cause of that event. In primitive beliefs, the error is sometimes blatant; we will all reject as absurd the claim that beating drums is the cause of the sun's reappearance after an eclipse, despite the evidence offered that ever time drums have been beaten during an eclipse, the sun has reappeared.[17]

[16] Copi and Cohen, *Introduction*, 125.
[17] Ibid., 126.

The fallacy of *false cause* is widely known as the fallacy of *post hoc ergo propter hoc* ("after a thing therefore because of a thing").

*Begging the question:* petitio principii

Begging the question or the fallacy of *petitio principii* consists in **assuming the truth of what one seeks to prove**. This mistake would seem to be quite a silly one, yet it can be obscured by the way in which the premisses of the argument are formulated. The following argument illustrates the fallacy in operation: "To allow every man unbounded freedom of speech must always be, on the whole, advantageous to the state; for it is highly conducive to the interests of the community that each individual should enjoy a liberty, perfectly unlimited, of expressing his sentiments."[18] Another example: "All of us cannot be famous, because all *of* us cannot be well known."[19]

*The appeal to emotion: argument* ad populum

The argument *ad populum* is a favoured device of propagandists and those with tyrannical inclinations. "It is fallacious because it **replaces the laborious task of presenting evidence and rational argument with expressive language and other devices calculated to excite enthusiasm, excitement, anger, or hate.**"[20] Historically, the speeches of Adolph Hitler are potent examples of the argument *ad populum*.

> Those who rely most heavily of arguments *ad populum* are now to be found in advertising agencies, where the use of that fallacy has been elevated almost to the status of a fine art. The products advertised are associated, explicitly or slyly, with things that we yearn for or that excite us favorably. Breakfast cereal is associated with trim youthfulness, athletic prowess, and vibrant good health; whiskey is associated with luxury and achievement, and been with high adventure; the automobile is associated with romance, riches and sex. The men depicted using the advertised product are generally handsome and distinguished, the women sophisticated and charming – or hardly dressed at all. So clever and persistent are the ballyhoo artists of our time that we are all influenced in some degree in spite of our resolution to resist. Almost every imaginable device may be used to command our attention, even to penetrate our subconscious thoughts. We are manipulated by relentless appeals to emotion of every kind.[21]

The mere association of a product and the emotion is in itself not an argument. The argument *ad populum* lies deeper. The implicit argument is that we ought to buy some article or other because it is associated with wealth or power or because everyone else is buying it.

[18] Richard Whately, *Elements of Logic* (London, 1826). Quoted in Copi and Cohen, *Introduction*, 127.
[19] Copi and Cohen, *Introduction*, 132.
[20] Ibid., 128.
[21] Ibid.

*The appeal to pity: argument* ad misericordiam

The appeal to pity is in effect a special case of the appeal to emotion. In the argument *ad misericordiam* **the emotions to which appeal is made are altruism and mercy.** Thus,

> The attorney for a plaintiff, seeking compensatory damages for an injury, often arranges to have the client's disability revealed in the courtroom in some heartrending way. And in criminal trials, although jury sympathy has no bearing whatever on the guilt or innocence of the accused, effective defense attorneys often appeal to the pity of the jury to the extent that the circumstances allow. Sometimes that appeal is made obliquely.[22]

Socrates, at his trial in Athens, resolutely refuses to appeal to pity in his defense. He will not bring his children into the courtroom to evoke pity in his favour. He says:

> I, who am probably in danger of my life, will do none of these things. The contrast may occur to his [each juror's] mind, and he may be set against me, and vote in anger because he is displeased at me on this account. Now if there be such a person among you – mind, I do not say that there is – to him I may fairly rely: My friend, I am a man, and like other men, a creature of flesh and blood, and not "of wood or stone" as Homer says; and I have a family, yes, and sons, O Athenians, three in number, one almost a man, and two others who are still young; and yet I will not bring any of them here to petition you for acquittal.[23]

*The appeal to force: argument* ad baculum

The appeal to force is obviously a fallacy that it seems to require no discussion at all. Sometimes, however, appeals *ad baculum* (literally "to the stick") can be employed quite subtly. The threat involved may be indirect or veiled. Consider the following words from Howard Baker at the opening of one meeting:

> The President continues to have confidence in the Attorney General and I have confidence in the Attorney General and you ought to have confidence in the Attorney General, because we work for the President and because that's the way things are. And if anyone has a different view of that, or any different motive, ambition, or intention, he can tell me about it because we're going to have to discuss your status.[24]

Appeal to force constitutes the abandonment of reason and is unacceptable.

---

[22] Ibid., 129.
[23] Plato, *Apology*.
[24] "White House Orders Silence on Meese," *Washington Post*, 29 April 1988.

*Irrelevant conclusion:* ignoratio elenchi

The fallacy of *ignoratio elenchi* occurs "**when an argument purporting to establish a particular conclusion is instead directed to proving a different conclusion.**"[25] For example

> [P]articular tax reforms are sometimes defended by an emphasis on the need to reduce budget deficits – when the real issue is the fairness or yield of the specific tax measure proposed. Or special programs proposed to support the building industry, or the automobile industry, may be defended with premisses that show the need for assistance but do not support the need for the kind or amount of assistance the program at issue would provide.[26]

While every fallacy (with the exception of *petitio principii*) is in a sense an *ignoratio elenchi*, in the sense in which it is referred to here it denotes a fallacy in which the argument misses the point without necessarily committing any of the other fallacies.

The term *non sequitur* is often applied to a fallacy of relevance (again with the exception of those that commit a *petitio principii*). It mean that the conclusion does not follows from its premiss or premisses. Consider the following example:

> "Veterans have always had a strong voice in our government," he said all too accurately, adding the non sequitur: "It's time to give them the recognition they so rightly deserve."

**Fallacies of ambiguity**

Arguments of ambiguity contain ambiguous words or phrases whose meaning shifts in the course of the argument, thereby rendering the argument fallacious.

*Equivocation*

Many words have more than one meaning and we have no difficulty distinguishing those meanings on the basis of the context in which they are used. "**When we confuse the several meanings of a word or phrase – accidentally or deliberately – we are using the word equivocally. If we do that in the context of an argument, we commit the fallacy of equivocation.**"[27] Equivocation can be employed in a humorous way as in Lewis Carroll's *Through the Looking Glass*. Take, for example, the following passage:

> "Who did you pass on the road?" the King went on, holding his hand out to the messenger for some hay.
>
> "Nobody," said the messenger.
>
> "Quite right," said the King; "this young lady saw him too. So of course Nobody walks slower than you."[28]

[25] Copi and Cohen, *Introduction*, 131.
[26] Ibid.
[27] Ibid., 143.
[28] Quoted at ibid.

*Amphiboly*

**A statement is rendered amphibolous when the loose or awkward combination of its words renders its meaning indeterminate.** It can be true on one interpretation and false on another. "**When it is stated as premiss with the interpretation that makes it true, and a conclusion is drawn from it on the interpretation that makes it false, then the fallacy of amphiboly has been committed.**"[29] Ancient oracles often has amphiblous utterances.

> Croesus, the king of Lydia, is said to have consulted the Oracle of Delphi before beginning his war with the kingdom of Persia. "If Croesus went to war with Cyrus," came the oracular reply, "he would destroy a mighty kingdom." Delighted with this prediction, which he took to mean that he would destroy the mighty kingdom of Persia, he attacked and was crushed by Cyrus, king of the Persians. His life having been spared, he complained bitterly to the Oracle, whose priests pointed out in reply that the Oracle had been entirely right: In going to war, Croesus *had* destroyed a mighty kingdom – his own! Amphibolous statements make dangerous premisses.[30]

*Accent*

"**When a premiss relies for its apparent meaning on one possible emphasis, but a conclusion is drawn from it that relies on the meaning of the same words accented differently, the fallacy of accent is committed.**"[31] Consider the statement: *We should* not *speak* ill of *our friends*. Copi and Cohen comment:

> At least five distinct meanings – or more? – can be given to those eight words, depending on which one of them is emphasized. When read without any undue stresses, the injunction is perfectly sound. If the conclusion is drawn from it, however, that we should feel free to speak ill of someone who is *not* our friend, this conclusion follows only if the premiss has the meaning it acquires when its last word is accented. But when its last word is accented it is no longer acceptable as a moral rule; it has a different meaning, and it is, in fact, a different premiss. The argument is a case of fallacy of accent. So, too, would be the argument that drew from the same premiss the conclusion that we are free to *work* ill on our friends if only we do not speak it – and similarly with the other fallacious inferences that suggest themselves.[32]

A damaging use of accent occurs when, in referring to another's writings, the author inserts or deletes italics or omits a qualification made by the original writer; in other cases paraphrasing may greatly change the meaning of the original writer. Thus, for example, an original statement might be: "George Harris is considered in liberal circles to be this generation's most gifted journalist." Harris may then quote this statement, but alter its accent as follows: "I am considered to be this generation's most gifted

[29] Ibid., 145.
[30] Ibid.
[31] Ibid.
[32] Ibid., 146.

journalist." The omission of the reference to "liberal circles" greatly distorts the sense of the original statement.

> To avoid such distortions, and the fallacies of accent that maybe built on them, the responsible writer must be scrupulously accurate in quotation, always indicating whether italics were in the original, indicating (with dots) whether the passages have been omitted, and so on.[33]

*Composition*

There are two closely related types of argument that are fallacies of *compostion*. Fallacy of *composition* entails "**reasoning fallaciously from the attributes of the parts of a whole to the attributes of the whole itself.**"[34] One example would be to argue that "since every part of a certain machine is light in weight, the machine "as a whole" is light in weight."[35] It should be obvious that the many light parts may in fact make the machine very heavy. Each part of a piece of music may be a paradigm of musical perfection but this does not mean that the work as a whole is a paradigm of musical perfection.

In the second type of fallacy of *composition*, "**the fallacious reasoning is from attributes of the individual elements or members of a collection to attributes of the collection of totality of those elements.**"[36] This second kind of composition fallacy may be defined as "the invalid inference that what may truly be predicated of a term distributively may also be truly predicated of the term collectively."[37] Thus, for example, we may say that the atomic bombs dropped during World War II did more damage than the conventional bombs dropped – but only distributively. Collectively, because there were many more of them, conventional bombs did more damage than the atomic ones.

It helps to keep in mind that a mere collection of parts is no machine; a collection of bricks is not a house or a wall. A machine, a house, a wall, and so on, are composed of parts arranged in certain and definite ways. Two more examples:

> [T]he universe is spherical in form … because all the constituent part of the universe, that is the sun, moon, and the planets, appear in this form.[38]

> But space is nothing but a relation. For, in the first place, any space must consist of parts; and if the parts are not spaces, the whole is not space.[39]

*Division*

The fallacy of *division* mirrors that of composition. There are two kinds. "**The first kind of division consists in arguing fallaciously that what is true of a whole must also be true of its parts.**"[40] To argue, for example, that a particular company is important and that therefore a particular employee of that company must also be

---

[33] Ibid.
[34] Ibid., 148.
[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Nicolaus Copernicus, "The New Idea of the Universe." Quoted in Copi and Cohen, *Introduction*, 152.
[39] F.H. Bradley, *Appearance and Reality*. Quoted in Copi and Cohen, *Introduction*, 153.
[40] Copi and Cohen, *Introduction*, 149.

important is to commit the fallacy of division. Another example would be to argue that because a machine is heavy, all of its constituent parts are also heavy.

"**The second type of division of fallacy is committed when one argues from the attributes of a collection of elements to the attributes of the elements themselves.**"[41] Oftentimes this kind of fallacy can seem like perfectly valid arguments for they take the same form as the following valid argument:

> Dogs are carnivorous.
> Afghan hounds are dogs.
> Therefore Afghan hounds are carnivorous.[42]

The following argument is however invalid, committing the fallacy of division:

> Dogs are frequently encountered in the streets.
> Afghan hounds are dogs.
> Therefore Afghan hounds are frequently encountered in the streets.[43]

There are certain similarities between the fallacies of division and accident, on the one hand, and the fallacies of composition and converse accident, on the other hand. Copi and Cohen explain:

> If we were to infer, from looking at one or two parts of a large machine that, because they happen to be well designed, every one of its many parts if well designed, we would commit the fallacy of converse accident, for what is true about one or two surely may not be true of all. If we were to examine every single part and find each carefully made, and from that finding infer that the entire machine is carefully made, we would also reason fallaciously, because, however carefully the parts were produced, they may have been *assembled* awkwardly or carelessly. But here the fallacy is one of composition. In converse accident, one argues that some atypical members of a class have a specified attribute, and therefore that all members of the class, distributively, have that attribute; in composition, one argues that, since each and every member of the class has the attribute, the class *itself* (collectively) has that attribute. The difference is great. In converse accident, all predications are distributive, whereas in composition, the mistaken inference is from distributive to collective predication.[44]

Similar remarks can be made about the fallacies of division and accident. In division the mistake is to think that since the class itself possesses a particular attribute, each member of the class also possesses it. Thus, argues the fallacy of division, because the a particular country is economically rich, each citizen is rich. In the fallacy of accident, the argument is that because some rule applies in general, there are no special instances in which it might not apply. Thus, the fallacy of accident occurs in the argument that someone should be charged with grievous bodily harm – in spite of the fact

[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] Ibid.

that the person he harmed was a criminal who attacked him in the course of burgling his house.

In the cases of the fallacies of composition and division, as also of equivocation, amphiboly and accent, *ambiguity* is present. When the meaning of words or phrases shifts in the course of an argument, logical errors will arise.