9. Informal fallacies

There are many different informal fallacies and they are sometimes called by different names. Here, we are introducing you to a small selection of the most common ones.

Unlike formal fallacies, informal fallacies are not a matter of invalid structure or form. Informal fallacies result from making flawed assumptions, misusing language, or making questionable appeals to authority (including attempts to undermine the authority of a real or imagined opponent).

Questionable assumptions

The first group of informal fallacies we'll look at relies on questionable assumptions. It should be obvious that if an argument depends on a questionable assumption, then it may fail to satisfy the first condition for being a sound argument – it may be that not all the premises are true. To return to an earlier example, consider the argument:

> Cigarette smoking has been shown to be a health hazard; therefore, governments should ban all advertisements that promote smoking.

The argument depends on the questionable assumption that governments should ban advertisements that promote activities that are a health hazard. There are good reasons to doubt that this assumption is true and if it is not true, the argument fails. So much is obvious. What is less obvious is that whether an assumption is questionable or not can depend on the *context* in which the argument is used. An assumption may be questionable in some contexts of inquiry but not in others. For example, suppose that in a public debate about the legitimacy of same-sex adoption, you came across the following argument:

> Same-sex adoption is wrong because the welfare of children is more important than satisfying the parental cravings of gay and lesbian couples.

The conclusion of this argument is that same-sex adoption is wrong. The reason given is that the welfare of children is more important than satisfying the parental cravings of gay and lesbian couples. That premise seems plausible. Nearly everyone agrees that the welfare of the children involved is the primary consideration in questions of adoption. But does the conclusion follow? How is it supposed to follow from the (undisputed) fact that the welfare of the child outweighs the needs of the potential parents that same-sex adoption is wrong? Clearly, the argument depends on the unstated assumption that children's welfare is in some way incompatible with same-sex adoption. That is, the argument assumes that same-sex adoption is bad for children. But in this context, that is a highly questionable assumption: that is the very question the debate about same-sex adoption is supposed to settle! An argument like this, which assumes something that is the very point at issue in that particular context, commits the fallacy of ***begging the question***.

(A note on terminology. The phrase 'begs the question' is often used to mean 'raises the question' or 'prompts the question'. For example, following a report about a train collision, we find the comment:

> Today's accident begs the question - just how safe are Australia's railways?

Here 'begs the question' is clearly not being used to refer to a questionable assumption in an argument. If you use the term 'question begging', it is a good idea to specify what you mean!)

One way to beg the question is for your argument to move in circles. An argument is ***circular*** if the conclusion is needed as support for one of the premises. Consequently, there is no independent support for the conclusion.

> *Paranormal activity is real because I have experienced what can only be described as paranormal activity.*

Here, the conclusion really just restates the supporting assumption in slightly different words; it does not add anything new. Moreover, whether paranormal activity *is* real (and whether it can be experienced) is exactly what is at issue here.

Notice that we cannot say that circular or question begging arguments depend on a *false* assumption. Indeed, the whole point of the argument is to try to *find out* whether the hypothesis was true or false. What we can say is that the argument is impossible to properly evaluate because the conclusion is not supported by independent reasons.

Informal fallacies can be tricky to spot because unlike formal fallacies, you cannot always point to an obvious flaw in reasoning. Spotting them, especially if they occur in more sophisticated arguments, can require interpretation and careful detective work. Often, they also rely on unstated assumptions. And sometimes, good arguments can follow the same reasoning patterns as informal fallacies!

Consider dilemmas (or dichotomies). These arguments present two opposing views, options, or outcomes as if they were the only possibilities: if one is true, the other must be false, and if you don't accept one, you must accept the other.

> *You're either with us or you're against us!*

This assumes there is no middle ground. If there is—that is, if the argument leaves out relevant options—it involves a ***false dichotomy***. If, however, there are no further options, the argument need not involve a flaw in reasoning. (And just to make things more complicated: Sometimes people argue that because there is a middle ground, that intermediate position must be correct. We should be wary of such claims as well—they may or may not involve good reasoning!)

Or consider ***slippery slope arguments*****.** These arguments aim to show that a seemingly innocent proposition is unacceptable because if accepted, it would inevitably lead to a sequence of increasingly unacceptable events.

> *You seem to have a good excuse to hand in your assignment late. But if I don't give you a late penalty, then I will be inundated with similar requests, and deadlines will just become meaningless. Sorry, I can't make any exceptions!*

Should we accept the conclusion? It depends. To evaluate such an argument, we should ask: Is each step likely to cause a slide to the next step? Is there a way to intervene and prevent the slide from happening? Has a similar slide occurred (or been prevented) in the past—and were the circumstances similar to the ones we have now?

Informal fallacies are tricky, in part, because opinions can differ on these matters. There can be real room for debate about which are the relevant circumstances to consider, whether the current situation is similar to earlier ones, and so on.

Questions about relevance are particularly clear in the last example we'll consider here: ***red herring*** arguments, which use premises that are logically unrelated to the conclusion to distract attention from the actual issue.

> *But I've really been enjoying the unit, it's really the best unit I've had so far!*

That would certainly be a flattering thing to say, but strictly speaking, it is not relevant for questions about the deadline.

> *But I wanted to do a really good job and my personal circumstances this week were such that I couldn't dedicate enough time to the assignment!*

Is that a valid excuse? Were those circumstances relevant? Quite possibly, they were—but there could also be genuine disagreement on that issue.

So why should we care about informal fallacies?

Informal fallacies are extremely widespread. They are often used to spin the evidence in a way that seems to support one's own interests, and they are frequently used by politicians and on social media. When they are not spotted, they can be powerful devices to influence other people's opinions. They are also one of the main techniques of science denial (just consider the debate on human-induced climate change; see here for some examples; https://www.skepticalscience.com/history-FLICC-5-techniques-science-denial.html https://www.skepticalscience.com/argument.php).

Sometimes they are used with manipulative intent; other times, people commit informal fallacies without realising it. It's possible to make a questionable assumption because to you, its truth just seems obvious—when in fact, you are begging the question and your assumption is as controversial as the conclusion you are arguing for. This becomes especially tricky when questionable assumptions are related to ambiguities in language.

Questionable language

A word or phrase is *ambiguous* if it can mean more than one thing. One way in which a premise of an argument may fail to be true or fail to support a conclusion is if it contains an ambiguous word or phrase. Consider the following sentence:

> Django has gone to the bank.

The word 'bank' is a paradigmatic example of an ambiguous word. It refers to the place where people keep their money and it refers to the side of a river. Taken by itself, the sentence above contains no clues as to which meaning is intended. So without further clarification we would not be able to tell what the sentence actually means.

Ambiguity can create a problem for argument evaluation because if a premise or conclusion contains an ambiguous word or phrase, then the premise or conclusion can mean more than one thing, and then the question of whether the argument is successful can't be answered. We can't decide whether premises are true or whether they support a conclusion if we don't know exactly what the premise or conclusion says.

Sometimes the context will make clear which meaning is intended, as in the following example:

> If Django goes to the bank, he'll find that it is closed because today is a public holiday. So he should put off his banking until tomorrow.

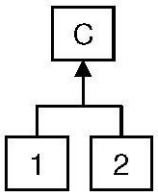
Although the premise of this argument contains the ambiguous word 'bank', this does not affect our ability to evaluate the argument because it is very clear from the context that the word is being used in the first, not the second sense mentioned above. River banks don't close for public holidays and one doesn't usually refer to a visit to a river bank as banking.

Other cases are more problematic. Consider the following argument:

> Broadcaster: Our radio station has a responsibility to serve the public interest. Hence, when our critics contend that our recent exposés of events in the private lives of local celebrities was excessively intrusive, we can only reply that the overwhelming public interest in these matters makes it our responsibility to publicize them.

Initially, we could represent this argument as follows:

> **1** Our radio station has a responsibility to serve the public interest.
> **2** There is an overwhelming public interest in the private lives of local celebrities.
> **Therefore**:
> **C**. Our radio station has a responsibility to publicize the private lives of local celebrities.



Think about what the phrase 'public interest' means as it occurs in premise. A radio station serves the public interest if they broadcast stories that are in some way important for the public to know about. But what about the meaning of 'public interest' as it occurs in premise **2**? Here the phrase pretty clearly means something different, namely, that members of the public want to know about the private lives of celebrities.

The two meanings of the phrase 'public interest' make this argument appear more convincing than it is. Is it true or plausible that it is an obligation of a radio station to broadcast stories that are in the public interest? Of course. Is it true or plausible that there is considerable public interest in the private lives of celebrities? Naturally. But – and this is the crucial part – the obligation of radio stations applies only to the first sense of public interest, and that is not the sense that attaches to the private lives of celebrities.

Of course it's true that if radio stations are supposed to broadcast stories that are in the public interest, and exposés of the private lives of celebrities are in the public interest, then the radio station has an obligation to broadcast such exposés. But it is not the case that if radio stations are supposed to broadcast stories that are of *importance to the public,* and *lots of people want to read* exposés of the private lives of celebrities*,* then the radio station has an obligation to broadcast them. It's easy to see this point if we restate the argument so as to clarify the meaning of each premise by eliminating the ambiguous term:

> **1** Our radio station has a responsibility to report on what is of importance to the public.
> **2** The public wants to know about the private lives of local celebrities.

Therefore:
C. Our radio station has a responsibility to publicize the private lives of local celebrities.

With the phrase 'public interest' replaced by two different phrases that express its meanings accurately, it is clear that we no longer have a good argument. The two premises are unrelated and so do not provide support for the conclusion.

What if we replaced the ambiguous phrase 'public interest' with the *same* meaning in both premises? Since there are two meanings to consider, we would get two possible arguments. One argument would be:

1 Our radio station has a responsibility to report on what is of importance to the public.
2 The private lives of local celebrities are of importance to the public.
Therefore:
C. Our radio station has a responsibility to publicize the private lives of local celebrities.

The second argument would be:

1 Our radio station has a responsibility to report on whatever the public wants to read about.
2 The public wants to read about the private lives of local celebrities.
3 **Therefore**:
C. Our radio station has a responsibility to publicize the private lives of local celebrities.

In both arguments, the conclusion does follow from the premises: *if* both premises were true, the conclusion would be true. But now both arguments fail to satisfy the first condition. In the first argument, premise **2** is false: the private lives of local celebrities are not a matter of public importance. In the second argument, premise 1 is false: the radio station does not have an overriding responsibility to report on *whatever* the public wants to read about, especially if that would infringe on the privacy of others. So it seems as though whatever way we read it, this argument is bound to fail.

If an arguer uses an ambiguous word to mean one thing in one premise and another thing in another premise, then the argument commits the fallacy of ***equivocation***. In that case, one premise will be true and the other false when the ambiguous word is read in the same way in both premises. But if the ambiguous word or phrase is read in different ways in each premise, the premises will not support the conclusion. So in either case, the argument fails to satisfy one of the two conditions for a successful argument.

Equivocations can be very subtle, and a person may not realize that they are using the same term in two different senses. There can be real disagreement as to whether an argument involves an equivocation at all. But that's also why discovering an equivocation can mean real progress!

One way to avoid equivocations is to define your terms. Try to state, as clearly as you can, what you mean by a certain term or concept—especially if this term is central to your argument and its interpretation is a potential source of controversy.

However, beware of circularity! Earlier, we saw that arguments can be circular. So can

definitions. A definition is ***circular*** if the term being defined is used in the definition.

> **Temperature** is the physical quantity that is measured by a **thermometer.**

By contrast, consider:

> Temperature is the average kinetic energy of the particles in an object.

This second definition tells us something new. By contrast, to understand the first definition, you already have to know what a thermometer is and that it measures temperature. When you are defining a term—or reading someone else's definition—ask yourself: Do you have to understand the term being defined to understand the definition? If the answer is yes, the definition is circular.

(Note that you might also struggle to understand non-circular definitions. For example, you might ask yourself, 'What is kinetic energy?' But importantly, understanding what kinetic energy is—the energy an object possesses due to its motion—does not require you to understand what temperature is. It leads you to a new question. That's why the second definition is not circular.)

Questionable authority and attacks on authority

The final category of informal fallacies we will look at involves questionable appeals to authority and attempts to undermine the authority of a real or imagined opponent.

An ***appeal to authority*** involves asserting that a claim is true because someone, who is claimed to be an authority on that matter, says so.

> I know the Easter Bunny exists because my Mom said so!

Or, for a slightly more sophisticated example:

> Of course it's wrong to eat meat! I read a book by an ethicist who works on animal rights, and they said so.

The problem with such appeals to authority is that the claim is made without regard to the evidence that would be needed to support the conclusion. That means: even if the claim about expertise is legitimate, that in itself does not support the truth of the conclusion.

In assessing an appeal to authority, there are at least two questions to ask: One, is the appeal to authority legitimate? Is the person an expert about the topic being discussed? (Note that experts can be cited about all kinds of things—but just because they are experts in one field doesn't mean they are in a position to know about another field.) Two, does the fact that they are an expert support the conclusion? This is where even appeals to legitimate authority (as in the animal rights example) can go wrong.

Does this mean you shouldn't trust experts after all? Of course not—the problem with appeals to authority is subtle. Of course it's permissible and in many cases reasonable to defer to experts, witnesses, and so on (see chapter 5). However, your acceptance of any claims based on authority should be provisional. This acknowledges that the truth of these claims depends not on the expertise of a certain person, but on further facts. When an authority can legitimately be used as justification for a claim, it is because we trust them to know these facts

(because they are in a *position to know*, they're *reliable/trustworthy* and we can *corroborate* their claim by learning more about these facts – from them or others). By contrast, an appeal to authority goes wrong when it claims that the truth of a claim is established solely by the fact that a particular person said so. It is a fallacy because it distorts the reasons that can support a particular claim. And that's why critical thinkers should worry about appeals to authority, even where they appeal to a credible expert and where the claim is likely true. If you accept a true claim for the wrong reasons, you are still committing a fallacy.

Another argumentative strategy that involves questionable claims about authority is to undermine the authority of someone—who might well be a legitimate expert—through irrelevant personal attacks.

> Imagine that someone has been invited to a job interview and the chairperson introduces them to the committee as follows: "I am not sure this applicant really wants to be here. They are actually on parental leave at the moment."

This is a (thinly veiled) ***personal attack***, designed to influence the committee's perception of the candidate. It also quite inappropriately suggests that a person who takes parental leave is not motivated to do their job. The personal attack or ***ad hominem*** argument (literally, an argument to the man) focuses on a personal detail or character flaw of the opponent. This detail or character flaw can be actual or invented—either way, it is irrelevant to the issue at hand (for example whether this is the right candidate for the job). The personal attack is therefore also closely related to red herring arguments.

A personal attack can also try to undermine an opponent by establishing ***guilt by association***. ***Tu quoque*** (or: you too!) arguments try to tarnish someone's credibility by associating them with another person or group that has a bad reputation.

> You say factory farming is wrong, but that's just what those extreme animal rights groups always say. You people never come up with any constructive solutions!

Rather than engaging with the opponent's argument or actual position, the aim of this is argument is just to make them look bad.

A similar move can be made to justify your own actions.

> I did cheat on the exam, but I know some of my classmates did it too.

The last example we'll discuss here involves inventing an opponent. Rather than engaging with a positon someone actually holds, the arguer criticizes a distorted, exaggerated, weaker, or even completely invented position. The aim is to make their own claim look stronger by comparison. However, if this is achieved by attacking an imaginary foe, or a ***strawman***, it makes the argument virtually pointless.

Strawman arguments are related to personal attacks and guilt by association because they are designed to undermine the credibility of an opponent and make them look bad by directing attention away from their actual position.

> After A said that we should put more money into health and education, B responded by saying that he was surprised that A hates our country so much that he wants to leave it defenseless by cutting military spending.

Attacking a straw man or otherwise discrediting your opponent (for instance through a personal attack or guilt by association), or appealing to someone else's authority might seem like a quick and easy way to defend your position – but it actually makes your position weaker than it needs to be! This is because in all of these cases, you are not engaging with the actual argument, which makes your criticism virtually irrelevant. You might trick some people into accepting your position—but for anyone who takes the time to look more closely at what you are saying, it will be obvious what you're up to. In the end, all of the strategies involving questionable claims about authority discussed here make the person using them look bad. They also involve unfair treatment of an opponent and are best avoided.

Further reading

The same-sex adoption example discussed in the text was adapted from Jill LeBlanc, *Thinking Clearly*, pp. 39-40.

Christopher Dwyer, 18 Common Logical Fallacies and Persuasion Techniques.
https://www.psychologytoday.com/au/blog/thoughts-thinking/201708/18-common-logical-fallacies-and-persuasion-techniques

Daniel Stalder: Logical fallacies in politics and beyond.
https://www.psychologytoday.com/au/blog/bias-fundamentals/201807/logical-fallacies-in-politics-and-beyond

Exercises

For each of the following passages, identify the informal fallacy being used:

1. Society is obliged to grant the privileges of adulthood to its members once they are mature enough to accept the corresponding responsibilities. But science has established that physiological development is completed in most persons by age seventeen. Hence, the maturing process has been completed by most seventeen-year-olds and therefore, these citizens should be granted all of the privileges of adulthood. equivocation

2. Sociologist: The claim that there is a large number of violent crimes in our society is false, for this claim is based upon the large number of stories in newspapers about violent crimes. But newspapers are more likely to print stories about violent crimes, since such crimes are very rare occurrences.
appeal to authority

3. Public housing advocates claim that the many homeless people in this city are proof that there is insufficient housing available to them and therefore that more low income apartments are needed. However, many apartments in my own building and in many other buildings in this city are currently vacant. Since apartments clearly are available, homelessness is not a housing problem. Therefore, homelessness can only be caused by people's inability or unwillingness to work to pay the rent. Questionable assumptions empty apartment are all for renting

4. "I used to think that way when I was your age." appeal to authority

5. I bet D is fudging the numbers. She's a lawyer and defends criminals for a living. She's not going to be squeamish about massaging the facts. personal attack Guilt by association.

6. There is no genuinely altruistic behaviour. Everyone needs a sufficient amount of self-esteem, which crucially depends on believing oneself to be useful and needed. Behaviour that appears to be altruistic can always be interpreted as motivated by the desire to reinforce that belief, a clearly self-interested motivation.

7. America is the best place to live, because it's better than any other country. circular

8. The new perfume Aurora smells worse to Joan than any comparably priced perfume, and none of her friends likes the smell of Aurora as much as the smell of other perfumes. However, she and her friends must have a defect in their sense of smell, since Professor Jameson prefers the smell of Aurora to that of any other perfume and she is one of the world's foremost experts on the physiology of smell. appeal to authority

9. The reason everyone wants the new "Slap Me Silly Elmo" doll is because this is the hottest toy of the season! circular

10. A: I am against the war!
B: Since you are against the war, you must be against our troops! false dichotomy

11. X says that pay cuts will be unavoidable. He's a politician, so what can you expect. personal attack or ad hominem Guilt by association.

12. A circular definition is a definition that goes in circles. circular

13. In the debate on whether the Simpsons character Apu should be eliminated because he's too offensive, The Value CMO's Brian Talbot pointed out the following: "If you're going to

eliminate Apu, or eliminate all the characters that might be offensive, they might end up eliminating the show." slippery slope arguments

14. Politician in a debate about same-sex marriage: “I have repeatedly demonstrated that I am an open minded individual. I voted to expand educational opportunities for all children." red herring

15. In home schooling, discipline is essential. If you make any exceptions, the child will find more and more excuses. These may seem like small exceptions at first, but it won’t be long before there is no schedule whatsoever and any attempt to get through the material is doomed. slippery slope arguments

16. “Thermometer readings have uncertainty which means we don’t know whether global warming is happening.” Equivocates

17. There is no expert consensus on climate change. Over 30,000 Americans with a science degree signed a petition saying humans aren’t disrupting climate. appeal to authority

18. "Fear is the path to the dark side. Fear leads to anger, anger leads to hate, and hate leads to suffering. I sense much fear in you." Slippery Slope

Review Equivocates And Question begging