

## *Fallacies*

Just as students of argument have noticed many patterns of successful or persuasive argument, so they have also noticed common patterns of bogus argument, some of which may seem persuasive until they are carefully examined. Some can be explained precisely, using formal methods, and others are subtler, though usually obviously wrong when they are spelled out. Pinning down exactly *why* a fallacy is wrong can often lead to very interesting philosophical discussion.

When I say 'if it is raining the match is off, and it is raining, so the match is off', that is a good argument (which uses *modus ponens*). If I then say 'the match is not off, so obviously it is not raining', that too is sound reasoning (using *contraposition*). But if I then reason 'it is not raining, so the match must be on', that is a blunder (**denying the antecedent**), because the match might be off for some other reason. It is also a blunder to assert 'the match is off so it must be raining' (**affirming the consequent**), because matches can also be cancelled when it is dry. Rain is sufficient but not necessary to cancel the match, but cancellation is neither necessary for rain to fall, nor sufficient to ensure rain. All of that takes some digesting, but you should focus on the example, and ask what the first statement did and did not prove.

Two fallacies when reasoning about sets of things are to deduce the nature of the members from the nature of the whole set, and to deduce the nature of the whole set from the nature of the members. The first one (**fallacy of division**) occurs if I reason that 'your group is very noisy, so you are very noisy', and the second one (**fallacy of composition**) occurs if I reason (as one great philosopher did!) that 'these cogwheels have a purpose in the machine, so the whole machine must have a purpose'.

When pursuing a train of thought, two famous problems with the reasoning are when you go round in a circle, or you are trapped in an infinite regress. An obvious **circularity** is when it emerges that two proofs rely on one another, as when someone argues 'believe in God because this text says so', and 'believe this text because God created it'. There is a shift between the two, since the first has an unreliable God but a reliable text, and the second has a reliable God but an unreliable text. The structure of the argument is fine, but each half needs something outside the argument (to provide the reliability). '**Begging the question**' (*petitio principii*) is a form of circularity, in which a proof uses an assertion which itself needs proof. The dodgy assertion is taken for granted, hoping no one will notice, as in 'fairies must exist, because fairies put the dewdrops on flowers'. Questions can also contain false assumptions, as in (perhaps) 'have you given up beating your wife?', or false dichotomies, as in 'are you a liar or a fool?'. Circularity sounds like a disaster, but fans of coherence in support of beliefs say that a wide-ranging circularity that returns to its starting point might be a good thing, if all the steps are mutually supporting.

A **regress** is usually seen as a fallacy, though we distinguish between 'benign' and 'vicious' regresses, and worry particularly about those that are 'infinite'. 'Every mammal has a mother' seems to be a benign non-infinite regress. A vicious infinite regress is a species of begging the question, in which the unproved assertion hidden in the proof turns out to need a repetition of exactly the same proof again. That generates the need for a third proof, and there is no way to bring it to an end, so the proof never concludes, as when we argue that if the mind is like a television screen, it will need a viewer, who will have a mind, which will contain a television screen, which will need another viewer, and so on. But notice that a regress might either be a blunder (if you hadn't spotted your own regress), or a good argument (if it shows the absurdity of an opponent's position).

A well-known fallacy is the **ad hominem**, which attempts to undermine your opponent's credibility, instead of addressing the argument (as in 'you can't challenge my ideas, because you haven't read my book'). A permissible version of *ad hominem* might argue that what your opponent is currently saying does not conform to the theory they have been defending, as when the spelling teacher makes a spelling mistake. A philosophically more interesting dubious step is **reification**, where a reasoner treats the phenomenon under discussion as an object, when it may be just a collection of properties, or an abstract idea. Is the number six a thing, because it has properties? Can we assume the mind is a thing, when it might be a brain process? **Equivocation** is also interesting, where a reasoner subtly shifts the meaning of a key word in the middle of an argument.

The most interesting of all the fallacies is certainly the **category mistake**, because attempts at explaining the blunder dig deep into the way we talk and think about the world. If I say 'democracy is dangerous' that sounds plausible, but if I say 'democracy is hexagonal, or deciduous, or purple, or bouncy' you would probably be baffled. Normally we try to make sense of such things as metaphors, especially if they occur in poems, but if I seem to mean them literally then that seems crazy. It seems that 'democracy' is a different category of concept from the words applied to it. 'Deciduous' is only used when we talk of trees, and 'bouncy' of solid surfaces. These examples are obvious errors in speech, but the fallacy arises when you are lured by the descriptions into placing a thing in the incorrect category. The mind is famously hard to categorise, and critics say that phrases like 'I've changed my mind' distort our understanding of minds. Maybe 'ten minutes have passed' is a category mistake, if it suggests that time is somehow moving.

There are four strategies for explaining category mistakes – as errors in grammar, as errors in meaning, as errors in normal conversational expectations, and as errors in understanding reality. The idea that it is pure grammar looks wrong (unless grammar refers to specific words). The key question is whether a category mistake is meaningful, so that the mistake is in saying something false, or whether what is said is meaningless, where the mistake is to think you have actually said something. It may be that there are unspoken assumptions behind a category mistake, such as the class of thing 'democracy' is. If reality has objective categories, then clearly we might be mistaken in what we say about them. Interestingly, we might say 'if political systems have shapes, then democracy is hexagonal' and be taken more seriously. There is no clear solution here, but many fallacies reveal the paths followed by rational minds.