

# Arguments

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**Philosophers study logic**

**Logic tells us how to distinguish good arguments from bad.**

**There are many problems that can be approached only by using logic.**

**Consider the following sentence:**

**(1)Therapeutic cloning is morally acceptable.**

**Some of us will believe this is true.**

**Others will believe it is false**

**We can't both be right.**

**Which of us is right is not the sort of question the truth of which can be determined by observation or experiment.**

**This can be decided only by engaging in argument.**

**When we construct an argument we put forward a claim and one or more reasons for believing the claim.**

**The claim we put forward is called the conclusion.**

**The reasons for believing the claim are called the premises.**

***Example: "We have a duty not to exploit non-human animals, but when we engineer their genes this is what we are doing. Therefore we shouldn't genetically engineer animals".***

**Premise one: we have a duty not to exploit non-human animals**

**Premise two: we exploit non-human animals when we engineer their genes**

**Conclusion: we shouldn't genetically engineer non-human animals**

**When we set out an argument like this we set it out 'logic-book-style'**

**There are different types of argument, but all fall into one of two categories:**

- **deduction**
- **induction**



## **Deduction:**

**If the patient is in a permanent vegetative state (PVS) then he will not be conscious**

**The patient is in PVS**

**Therefore the patient will not be conscious**

## **Induction**

**People with Huntington's Disease have always been observed to have the HD gene on chromosome 4**

**Therefore the next person who develops Huntington's Disease will be observed to have the HD gene on chromosome 4**

**A deductive argument is such that if it is valid and its premises are true then its conclusion *must* be true.**

**A deductive argument is either valid or invalid: it is an either/or matter.**

**An inductively strong argument is such that if its premises are true its conclusion is extremely likely to be true.**

**Inductive arguments can be strong or weak: inductive strength is a matter of degree.**

**Inductive arguments, even at their strongest, do not deliver cast iron guarantees.**

**All such arguments tacitly rely on what the philosopher Hume called the 'principle of the uniformity of nature'.**

**This belief underlies all our empirical reasoning.**

**It cannot be justified without circularity**

**The fact that induction does not give us certainty does not make it inferior**

**Without induction science would be impossible**

**The examples I have so far offered are both good arguments but look at these:**

**If the patient is in a permanent vegetative state (PVS) then he will not be conscious**

**The patient is not conscious**

**Therefore the patient is in PVS**

**When I passed that exam I wore my red shirt.**

**Therefore if I wear my red shirt next time I take an exam I will pass that exam too.**

**The argument on the left is an invalid argument: the premises of this argument, even if they are true, give us no reason whatsoever to believe the conclusion.**

**Even if we are certain of the truth of these premises this tells us *nothing* about the truth of the conclusion.**

**The argument on the right is an inductively weak argument: even if the premise is true the likelihood of the conclusion is hardly raised at all.**

**Even if we are certain of its truth, this tells us nothing about the likelihood of the conclusion's being true.**



**A bad argument tells us nothing.**

**But it can lead us astray if we don't recognise it as bad.**

**It is important, therefore, to learn how to evaluate arguments.**

**In evaluating an argument we must ask two questions:**

- **Is/are its premise(s) all true?**
- **Does the conclusion 'follow from' the premises?**

Looking at our two questions there are four possible answers to these questions taken together:

### 1. The answer to both questions is 'yes'

This argument is such that *all* its premises are true *and* its conclusion follows from its premises. In this situation the argument is said to be sound. A sound argument gives us excellent reason to believe the conclusion. A sound argument is very definitely a good argument.

### 2. The answer to (i) is 'yes, but the answer to (ii) is 'no'

This argument is such that although all its premises are true, the conclusion does not follow from them. In this situation the truth of the premises gives us no reason at all to believe in the truth of the conclusion: the premises and the conclusion are not related in the right way to convince us of anything. Imagine, for example, that the premises of arguments three and four are true, this would not give us any reason to believe the conclusions would it? These arguments can't be considered 'good' in any sense.

### 3. The answer to (i) is 'no', but the answer to (ii) is 'yes'

This argument is such that although its conclusion follows from its premises, at least one of its premises is false. In this situation the fact that a premise is false means we have no reason to believe the conclusion despite its following from the premises. The fact that the conclusion follows from the premises, however, means that the argument can be considered a 'good' argument. As an *argument* it is good and given that we often don't know whether the premises of an argument are true or false, this is often the best we'll get.

### 4. The answer to both questions is 'no'

In fact we needn't bother with this situation because we have just seen that if the answer to *either* of these questions is 'no' then the argument gives us no reason to believe the conclusion. A fortiori, therefore, if the answer to *both* questions is 'no' the argument gives us no reason to believe the conclusion. ('a fortiori' just means 'it is even more certain'). This is a very bad argument.

**The relation of 'following from' covers two different sorts of relation between a (set of) premise(s) and a conclusion:**

- **The conclusion of a deductive argument follows from its premise(s) if the argument is valid.**
- **The conclusion of an inductive argument follows from its premise(s) if the argument is inductively strong.**

**We shall consider how these differ in the next podcast.**

**In this podcast we have considered what the two sorts of ‘follows from’ have in common: the fact that an argument can be counted as a good argument only when it is valid (deduction) *or* inductively strong (induction).**

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