A priori

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In scholastic logic, a demonstration or proof or argument is **a priori** when it proceeds from cause to effect. It contrasts with **a posteriori** demonstration, which proceeds the other way round, from effect to presumed cause. *A priori* knowledge is what is derived from such demonstration or reasoning, likewise knowledge *a posteriori*.

In modern philosophy of science, and philosophy generally, *a priori* argument is typically identified as deductive, or independent of experience, *a posteriori* as inductive or based on empirical evidence.

Derivation

'A' in Latin is 'from', and 'priori' is the ablative of 'prior', meaning 'before'. So 'a priori' is literally reasoning from what is before to what comes after, or knowledge based on such reasoning. Similarly 'a posteriori' is reasoning from what comes after to what comes before. Scholastic writers often used the term 'propter quid' for *a priori*, and *quia* for *a posteriori*. In chapter 17 of Part III-II of *Summa Logicae*, Ockham writes

Latin	English
Propter quod oportet scire quod quaedam est demonstratio cuius praemissae sunt simpliciter priores conclusione, et illa vocatur demonstratio a priori sive propter quid.	On account of this we must know [*scire*] that one sort of demonstration whose premisses are absolutely prior to the conclusion, and [that] this is called demonstration *a priori* or *propter quid*.
Quaedam est demonstratio cuius praemissae non sunt simpliciter priores conclusione, sunt tamen notiores sic syllogizanti, per quas devenit sic syllogizans in notitiam conclusionis, et talis demonstratio vocatur demonstratio quia sive a posteriori.	Another sort is demonstration whose premisses are not absolutely prior to the conclusion, and which are nevertheless better known to the syllogiser in this way, through which the syllogiser thus arrives at knowledge of the conclusion. And such demonstration is called demonstration *quia* or *a posteriori*.

The exemplar of a priori reasoning is mathematical demonstration, for example from the definition of a triangle (three straight lines enclosing a space) to one of its properties (the sum of the angles is that of a straight line). So a priori reasoning is going to be deductive. By contrast, the exemplar of a posteriori reasoning is from effect to cause. Aristotle frequently gives the example of an eclipse, where we observe the effect of the sun going into shadow, and reason that its cause is the moon going in front of it. But in that case we have no direct or immediate knowledge of the cause. All we have to go by is what we observe, the effect. Since there is no logical connection between the effect and the cause, it follows that the reasoning cannot be deductive, and may well be 'inductive'.