Knowledge rationalism

To understand what rationalism about knowledge claims, we first need to understand two important distinctions.

TWO IMPORTANT DISTINCTIONS

Analytic/synthetic
The contrast between analytic and synthetic propositions is a contrast between types of proposition. A proposition is analytic if it is true or false just in virtue of the meanings of the words. Many analytic truths, such as ‘squares have four sides’, are obvious, but some are not, e.g. ‘In five days time, it will have been a week since the day which was tomorrow three days ago’ (think about it!). A proposition is synthetic if it is not analytic, i.e. it is true or false not just in virtue of the meanings of the words, but in virtue of the way the world is, e.g. ‘ripe tomatoes are red’.

A priori/a posteriori
This contrast is, in the first instance, between types of knowledge. It concerns how we know whether a proposition is true. You have a priori knowledge of a proposition if you do not require (sense) experience to know it to be true. An example is ‘Bachelors are unmarried’. If you understand what the proposition means, then you can see straight away that it must be true. You don’t need to find bachelors and ask them if they are married or not. Propositions that can only be established through experience are a posteriori. An example is ‘Snow is white’.

When applied to propositions, the a priori/a posteriori distinction is about how to check or establish knowledge. It is not a claim about how we come to understand the proposition. To learn what a proposition means, to acquire the concepts or words involved, we may well need sense experience. But that is a different issue from how, once we understand it, we check if it is true.

We can also apply the a priori/a posteriori distinction to concepts. An a posteriori concept is one that is derived from experience. An a priori concept is one that cannot be derived from experience.

EMPIRICISM V. RATIONALISM

On first reflection, it might seem that the two distinctions line up neatly: only an analytic proposition is also known a priori; and all synthetic propositions are known a posteriori. ‘Bachelors are unmarried’ is not only known a priori, but is also analytic. ‘You are reading this handout’ is synthetic and can only be known through sense experience. But is this alignment correct?
All analytic propositions are known a priori. Because they are true (or false) just in virtue of the meanings of the words, we don’t need to check them against sense experience to know whether or not they are true. But are all propositions known a priori analytic? Could there be a priori knowledge of some synthetic propositions? The debate over whether there is a priori knowledge of any synthetic propositions is a debate between empiricism about knowledge and rationalism. (The terms ‘rationalism’ and ‘empiricism’ have been used in different ways at different times, and sometimes quite misleadingly. However, the common definition is the one given in the syllabus.)

Empiricism claims that all knowledge of synthetic propositions is a posteriori, while all a priori knowledge is of analytic propositions. Anything we know that is not true by definition or logic alone, we must learn and test through our senses.

Rationalists deny this, claiming that there is some a priori knowledge of synthetic propositions, either because this knowledge is innate or because we can gain such knowledge using reason rather than sense experience. Many rationalists add that the synthetic a priori knowledge we gain through reason or innately cannot be arrived at in any other way. They may also argue that is superior, for example by being more certain, to the knowledge or beliefs we gain through the senses.

We should refine this a little: empiricists deny, and rationalists assert, that we can gain a priori knowledge of synthetic propositions that are about things other than one’s own mind. Many propositions about my mental states are synthetic, e.g. ‘I feel sad’ or ‘I am thinking about unicorns’. But they don’t require sense experience to be known; in fact, does knowing my own thoughts involve experiencing them at all? We don’t need to worry about this. Rationalists and empiricists alike accept that we just do know that we have certain thoughts and feelings. The argument is about knowledge of things other than our own minds.

RATIONALISM
Rationalists argue that there are two key ways in which we gain a priori knowledge of synthetic propositions:

1. we have a form of rational ‘intuition’ or ‘insight’ and the power of deduction which together enable us to grasp certain truths intellectually;

    and/or

2. we know certain truths ‘innately’.

Historically, rationalists have connected these two non-empirical forms of knowledge, and a complete account of how we gain such a priori knowledge involves both. We discuss just the first in this handout.

What is ‘intuition’? This doesn’t mean a ‘gut feeling’ or ‘instinct’. It refers to rational intuition. For example, when you consider a deductive argument, do you understand why, if the premises are true, then the conclusion must be true? How is it that you can ‘see’ the conclusion follows - that it must be true if the premises
are? This grasping of rational truths takes us towards the idea of ‘rational intuition’, though it covers much more than deductive reasoning. At the heart of rational intuition is discovering the truth of a claim just by thinking about it.

**NECESSARY AND CONTINGENT TRUTH**

To understand this better, we need another distinction. Hume says that matters of fact can be denied without contradiction. In other words, statements of matters of fact could be either true or false. A proposition that could be true or false is contingent. Of course, it will be either true or false, but the world could have been different. It is true that you are reading this book; but you could have been doing something else - it could have been false. So it is contingently true. It is contingently true that there are more types of insect than there are of any other animal. This wasn’t always true, and one day it might be false again.

A proposition is necessary if it must be true (if it is true), or must be false (if it is false). Mathematical propositions are necessary: 2 + 2 must equal 4; it is not possible (logically or perhaps mathematically possible) for 2 + 2 to equal any other number. (Of course, it is possible that the figure ‘2’ could have been used to mean the number 3. But then ‘2 + 2’ wouldn’t mean 2 + 2; it would mean 3 + 3. To test whether a proposition is true or false, in all cases, you have to keep the meanings of the words the same. If ‘2’ means 2, and ‘4’ means 4, then 2 + 2 must equal 4.) Likewise, analytic truths are necessary: if a proposition is true by definition, then it must be true.

Historically, philosophers agree that a priori knowledge is necessary and a posteriori knowledge is contingent. Why? A posteriori knowledge is knowledge of how the world is, and surely the world could always have been a different way - so all propositions about the world could have been true or false. Could necessary truths be established a posteriori? (Recall again that, for a priori knowledge, sense experience may be necessary, e.g. to enable us to understand the claim. But it is not sufficient - sense experience is not how we establish or justify the claim.) Leibniz points out that our sense experience only provides us with information about particular instances - that these two apples and these two apples make four apples; that this triangle has internal angles that add up to 180°; and so on (New Essays on Human Understanding, p. 2). But ‘however many instances confirm a general truth, they aren’t enough to establish its universal necessity’ - because how things are doesn’t tell us how things must be. If we reject this, and argue that ‘2 + 2 = 4’ is just a generalization of our experience so far, then we are saying that it is possible, one day, that 2 + 2 will equal some other number. But this is inconceivable. So, we should say that mathematical knowledge is a priori, established through reasoning alone.

So, whatever turns out to be a necessary truth must be known through a priori reasoning. If any of necessary truths are not analytic, then we have some synthetic a priori knowledge. For an extended discussion of Descartes’ attempt to establish synthetic a priori knowledge, see the handout on ‘Descartes' rationalism’.
OBJECTIONS FROM KNOWLEDGE EMPIRICISM
Rationalists claim that we have a priori knowledge of some synthetic propositions. Empiricists can respond by arguing

1. that the propositions aren’t synthetic, but analytic; or
2. that we don’t know them a priori; or
3. that we don’t know at all.

The third option isn’t available for mathematics, but the first two have been defended by empiricists.

Is mathematics analytic?
We argued above that mathematical truths are necessary and therefore known a priori. Empiricists can accept that mathematical knowledge is a priori, if they also argue that it is analytic. In other words, mathematical knowledge is reached by analysing the concepts involved. But if this is true, how are mathematical ‘discoveries’ possible? How can we ‘discover’ something that is true in virtue of the meaning of the concepts? Empiricists reply that analytic knowledge doesn’t need to be obvious; mathematical truths are very complex, so it takes work to establish that they are true.

In the twentieth-century, empiricists such as Bertrand Russell argued that although mathematical truths were not analytic, they were nevertheless ‘logical’ truths. His argument depended on technical developments in logic and in mathematics. Philosophers still disagree about the success of Russell’s attempt - and attempts by other philosophers since - to reduce mathematics to logical truths. While some attempts are promising, no reduction has been completed.

Geometry
The truths of geometry don’t seem to be analytically true. The fact that it takes at least three straight lines to enclose a space in two-dimensions seems to be a truth about space, rather than the concept of space. Yet it has mathematical certainty, and can be proved by mathematical geometry. How could such certainty come from sensory experience alone?

In fact, there is more than one geometry of space. It is in classical, or Euclidean, geometry that it takes three straight lines to enclose a two-dimensional space. But mathematicians have worked out perfectly good, consistent non-Euclidean geometries in which this and other ‘truths’ are not true (if you curve the two-dimensional plane, e.g. the surface of the Earth, you can enclose a space with two straight lines - longitude). So, empiricists argue, geometry applied to the real world has two elements: conceptual definitions, which are analytic truths; and then an a posteriori claim about which type of geometry applies to space. So there are geometrical truths about the nature of space, but they are not necessary - space could have been otherwise, e.g. non-Euclidean. In fact, in some cases in advanced physics, Euclidean geometry does not describe space accurately.