

Knowledge of Modality

Modalities are ways in which things can be true, and philosophers are particularly interested in necessary, possible and impossible truths. Normal experience and science acquaint us with the facts, and show us actual ways that things are, but it is not clear how experience can show that something is possibly true, or that it must be true. Hence there is a puzzle – if we do indeed know such modal facts – as to *how* we come to know them. If a strict empiricist decides we lack sufficient experience to know them, then maybe we don't know them after all.

The traditional view of these modal truths is that we can know them a priori. That is, we don't need experience to know them, because they are just obvious (after clear and careful thought). If pressed, it is said that we have a faculty of intuition, or pure reason, or imagination, which is obvious to us when we think about simple arithmetical or geometrical truths, or foundational facts about the world, such as that past events cannot be undone, or that you cannot go up and down a hill simultaneously. The strongest version of this view says that necessary truths and truths known a priori are identical: if you know it a priori it is necessary, and if it is necessary it can be known a priori. This seems to make necessity and possibility 'epistemic' – that is, wholly dependent on what we can know a priori. This seems unlikely, as there must be unknown necessary truths, such as obscure theorems in mathematics (which may be beyond human knowability). Some actual necessities may even exceed the human ability to express them. Maybe possibility is not like necessity here, since reason sees necessities, but we learn possibilities from experience. It still seems the case, though, that only thought can reveal possibilities, if they have not actually been realised.

This close relationship between a priori thought and modal truths has been challenged in two ways – by suggesting that we can also know some contingent truths by a priori means, and that we can know some necessary truths through experience (a posteriori). One candidate for an a priori contingent truth is the fact that I exist, which may be known directly by thought (as in 'I think, therefore I exist'). A second candidate is when an abstract concept is defined (or 'stipulated') on the basis of some physical fact, such as the assumption that light rays are straight lines, or that the standard metre is the length of a particular metal rod. We then know a priori that light rays are straight, and that a metre is the length of the rod, even though the straightness of actual light rays, and the length of the actual rod, are contingent matters. These claims are controversial, and critics say that two components of what we say are being confused here (and the critics have devised 'two-dimensional semantics' to explain it).

A stronger case has been made for the existence of a posteriori necessary truths. It seems hard to claim that we can directly experience necessity in the universal general truths of mechanics or thermodynamics, but it seems impossible that some observed facts could ever be wrong. When we discover that gold has atomic number 79, that seems to be necessarily the case, because if the number changed it would cease to be gold. This seems to be an a posteriori necessity, because the truth concerns the 'essence' of gold. When the ancients discovered that the Morning Star and the Evening Star were in fact one item (the planet Venus), the identity of these two (if correct) could never be false, because there is just one object. Thus an identity is a necessity which can be known a posteriori. Similarly, that lightning is (as we now know) electrical discharge, or that water is H₂O, are necessarily the case. It also seems necessarily true that human bodies are controlled by DNA, and that each animal is necessarily a member of its species, which are also discoveries. The doctrine of 'scientific essentialism' says that it is only the advent of science that has begun to reveal these necessities to us, by means of empirical research. Although these are persuasive examples, it still remains unclear how an observation in this world has to hold in any other possible world.

The commonest strategy for assessing what is necessary or possible has been (and remains) our capacity to conceive of it happening. If it is conceivable it seems to be possible, the inconceivable seems to be impossible, and the inconceivability of it not happening seems to mark necessity. This view is favoured by empiricists, because it at least restricts modality to something we can experience, even if the human imagination is fallible. Obviously this approach must be cautious, because people may either have excessively vivid or rather stunted imaginations, which will give the wrong answers about modality. A child can picture a bonfire burning under water, but wood cannot be imagined combining with oxygen if no oxygen is available. Thus we may appear capable of conceiving things which are actually impossible. Similarly, we may lack the mental capacity to imagine things which are in fact possible. Even when we decide after great effort that something is impossible, it is hard to distinguish incoherence in our imaginings from incoherence in reality.

If we are to produce reasonably reliable assessments of modality, we must ask about the depth of understanding required of the person doing the imagining. We need to conceive the causes of bonfires, as well as picturing them. If we can actually discern a contradiction, then seeing that it is impossible is easy, but we may have to dig deep to find the contradiction. One approach is to say that the modal facts are what could be conceived by an ideal mind, in possession of all of the actual facts. Since we have no contact with ideal minds, and even they may have limitations which open a gap between what is conceived and how things really are, this doesn't seem to help.

Again science seems to play a leading role, because it offers the most accurate information to guide the imagination in its assessments. If science merely observes and measures the current facts, this may not be sufficient to infer what is possible or impossible, but one view suggests that nature is dynamic rather than static, and so we observe potentialities, powers and dispositions, as well as the current arrangements of matter, and that is what reveals the possibilities, when imagination is applied accurately to what might result from this dynamic situation. If sceptics say there is nothing more to a disposition than observations of the mechanisms and past behaviour of current reality, this may undermine our prospects for knowing about modality. Basing modal judgements on the active powers in nature also restricts us to current nature, telling us nothing about what is possible in other universes.

We cannot abandon attempts to explain modal knowledge, because it is undeniable that we employ beliefs about what can or might or cannot happen in every moment of our lives, and no philosopher could persuade us to give this up.