

argument against sensation: we perceive plurality, yet also perceive that things change, which on Eleatic premises is logically impossible; therefore perception is false, and if there are many they must be of the same kind as the Eleatic One. This conclusion may have aided LEUCIPPUS in his conception of ATOMISM. XENOPHANES, too, was often regarded in antiquity as an Eleatic, because of the superficial resemblance of his one God to Parmenides' one Being; but in fact Parmenides' logical process of inference is radically different from Xenophanes' reversal of Homeric anthropomorphism. Parmenides and the other Eleatics had a profound effect on the development of PRE-SOCRATIC thought. The material MONISM of the Milesians and the structural monism of HERACLITUS were replaced by systems that envisaged a plurality of essentially immutable elements, and which now had to face the question of the validity of sensation. (G.S.K.)

Emerson, Ralph Waldo (1803–82)

American romantic thinker, who was inspired by German idealism to seek spirituality not in the supernatural but in what is 'common', 'low' and 'casual'. His works include *Nature* (1836) and *Essays* (1841–4) whose vision of a 'new degree of culture' that would 'revolutionise the entire system of human pursuits' enthralled the young NIETZSCHE. See also AMERICAN PHILOSOPHY.

Emotivism Emotivism is the doctrine, associated chiefly with LOGICAL POSITIVISM, that value judgements in general, and ethical judgements in particular, express emotions rather than representing facts; see also EMPIRICISM, ETHICS.

Empedocles Greek philosopher, physician and democrat from Acragas in Sicily, who flourished c.450 BC. His mystical claims (e.g. that he was a god, having previously been 'a boy, a girl, a bush and

a bird and a dumb fish in the sea') gave rise to extravagant biographical inventions. To meet PARMENIDES' dilemma he claimed in his physical poem 'On Nature' that apparent coming-to-be and perishing were caused by the mixture and separation of eternally existing 'roots' or elements – fire, water, earth and air (whose corporeality he verified by observation). Attraction and repulsion of the roots were caused by specific motive agents, Love and Strife, which also possessed size and bulk. An equivalent to Parmenides' 'sphere' of Beings was reproduced when Love permeated the roots and mixed them together; then Strife gradually entered the sphere and caused plurality to assert itself. Thus the senses, if properly used, were not necessarily deceptive. Sensation was caused by physical effluences from objects entering pores in the sense-organs and meeting with corresponding roots there; thus in vision, fire activates fire in the eye. Empedocles avoided the apparent coming-to-be of traditional cosmogonies by making the entry of Strife into the sphere merely one stage out of four in a never-ending cosmic cycle: domination of Love, entry and gradual increase of Strife, domination of Strife, entry of Love. Our world belongs to the second of these. Corresponding with the transitional stages were two evolutionary stages: when Love is in the ascendant, first disunited limbs, then monsters; when Strife increases, first 'whole-natured forms', then our world. In a second poem, 'Purifications', Empedocles described a personal cycle of innocence, pollution, fall, purification and deification. Pollution is caused by bloodshed and strife, and leads to successive incarnations of the type also envisaged by PYTHAGOREANS and Orphics. See also PRE-SOCRATICS. (G.S.K.)

Empiricism In ordinary use, the term 'empiricism' (from the Greek *empeiria*,

meaning 'experience') implies the employment of methods based on practical experience as opposed to abstract theory. But in philosophy the word is used to refer to the theory that all knowledge is derived from experience. It was developed mainly by a succession of British philosophers, of whom the most important are LOCKE, BERKELEY, HUME and John Stuart MILL. (In America William JAMES developed a version he called 'Radical empiricism'.) Although such movements as ENCYCLOPEDIISM in France have been inspired by empiricist ideas, empiricism has never taken hold on the Continent, whereas in Britain it has been the dominant tradition in philosophy since the seventeenth century. Moreover, Continental empiricists such as CONDILLAC have always been directly or indirectly influenced by British philosophy. The general principles of empiricism are opposed primarily to those of RATIONALISM, and it was as a reaction against the systems of DESCARTES, SPINOZA and LEIBNIZ that modern empiricism originated. There are two central questions at issue between rationalists and empiricists. The first concerns A PRIORI concepts (or 'innate ideas' as they were misleadingly called in the seventeenth century), or ideas supposedly not derived from sense-experience but independently produced by reason or intellect. Rationalists allow that some concepts are empirical (e.g. that we derive our idea of redness from our experience of seeing red objects), but they maintain that our knowledge of the world also involves a priori concepts like those of cause and substance. It is fundamental to empiricism to deny the existence of such ideas. Empiricists therefore argue either that allegedly a priori concepts can be broken down into a combination of simpler concepts derived from experience, or sometimes, and more radically, that they are not genuine concepts at all (e.g. that 'substance', as a metaphysical

term, is simply a word to which no meaning can be assigned). The second dispute between rationalists and empiricists concerns a priori propositions or statements. It is generally agreed that all necessary truths are a priori, since we can learn from experience only what has been and is likely to be the case, not what *must* be so. Empiricists, who believe that we have no means of acquiring knowledge except through observation of what actually happens, contend that necessary truths are true by definition, or ANALYTIC. Rationalists, on the other hand, hold that some a priori statements are synthetic; that is, that they tell us something about the nature of the world. The assertion 'every event must have a cause', for example, has been said to be a self-evident principle of this kind: a priori because it states a necessary connection, and synthetic because it is not simply true by definition (as 'every *effect* has a cause' is). It is characteristic of empiricism to deny that reason can assure us of the truth of a genuinely synthetic statement and therefore that any proposition can be both a priori and synthetic.

As a result of their disagreement over these matters of principle, rationalists and empiricists have very different attitudes towards natural science and towards metaphysics. Rationalists have been inclined, broadly speaking, to think of beliefs based on experience as infected with error. For them, an understanding of the world is not to be gained through sense-perception, which is confused, but through metaphysical speculation. But precisely because metaphysics claims to give knowledge of a reality transcending experience, metaphysical inquiry depends upon our having a priori concepts. The empiricist tradition has therefore been antagonistic to metaphysics, and has set a high value on science as a means of acquiring knowledge: Hume described NEWTON as 'the greatest

and rarest genius that ever arose for the ornament and instruction of the species'.

The solutions that empiricists offer to particular philosophical problems are essentially applications of these general principles. Hume's account of causation is a classical example. He is well aware that the relation of cause and effect presents crucial difficulties for empiricism and that he has to show that the idea of a cause originates in experience. He maintains, like most later empiricists, that the causal connection between two events is, in fact, their regular succession, which is a matter of observation. He admits that the idea of a cause involves the idea of necessity, but this too he traces to its origin in experience. The repeated observation of B following A produces in us the habit of thinking of B when we perceive A. It is the experience of this habit which is the source of our idea of necessity. 'Necessity', Hume writes, 'is something that exists in the mind, not in objects'. He claims therefore to have refuted the rationalist account of causation as a necessary connection between objects, and to have shown that the idea of causation is a complex one that can be analysed into simpler elements (e.g. the idea of regular sequence) each of which is derived from experience.

Another typical application of empiricist principles is to the theory of mathematics. Mathematics has always been a stronghold of rationalism, since mathematical propositions are, on the face of it, a priori and synthetic: they seem to be about objects, but truths which *must* be so and which we can know in advance of any experience of them. This challenge has been met by empiricists in two ways: by denying either that mathematics is a priori or that it is synthetic. The first course is taken by J. S. Mill, who treats mathematics as a generalization from experience. ' $7+5=12$ ' is, according to him, a law of

nature based on observation. If, however, arithmetic is only established by experience, it might possibly be falsified by experience, difficult though it may be to imagine what such an experience could be. Few empiricists have been prepared to swallow this paradox. They have usually taken the other alternative, asserting that mathematics is analytic, not synthetic. According to this view, mathematical propositions are true by definition. ' $7+5=12$ ' is a necessary truth, but only because we define '7', '+', '5', '=' and '12' in such a way as to make it so. Mathematics therefore does not, as rationalists have thought, give us any information about the nature of the world. Though there are still considerable technical disagreements about the nature of mathematics, empiricists all agree on the essential point that its truths are necessary only because they are in this way uninformative.

Empiricism is primarily a theory of knowledge, but has also been influential in the field of ETHICS. Moral concepts (like 'rightness', 'obligation' and 'duty') must, if they are genuine concepts and if empiricism is correct, be derivable from experience like any others. But according to rationalists this derivation is impossible. We may be able to see that someone is behaving ungratefully, but we cannot similarly see that their ingratitude is wrong. Our idea of wrongdoing, it is said, is not based on experience, and we know that ingratitude is wrong only because reason intuitively grasps the a priori connection between these two ideas. The basic principles of morality are self-evident, and do not need to be justified by argument or observation, even if they could be. The empiricist reply to this intuitionist theory was that, in Hume's words, 'morality is more properly felt than judged of'. We do not, admittedly, observe the wrongness of an action, but we *feel* it, and it is this

feeling that we put into words when we say that the action is wrong. This point of view – often called moral sense theory – was characteristically combined with the theory that our only duty is to produce as much happiness as possible. Although UTILITARIANISM is not an essential part of empiricist ethics, the combination is understandable: since empiricists do not believe that moral principles are self-evident, it is natural for them to hold that morality is justified by its tendency to bring about human happiness, which makes an appeal to each person's instinctive feelings of sympathy. However contemporary empiricists have come to realize that it is unsatisfactory to treat moral judgements as statements about feelings, and to regard ethics as a branch of the science of human nature, in the manner of Hume. They have therefore tended to argue that moral principles do not assert a priori truths, because they assert nothing at all, their function being solely the practical one of influencing behaviour. It has been suggested that moral judgements are really commands (e.g. that 'stealing is wrong' means 'do not steal') or that they are expressions of feelings, rather than statements about them. This 'emotive theory of ethics' rests on a naïve view of language, and has been widely criticized.

If modern empiricism is compared with that of the eighteenth and nineteenth centuries, the most significant advance is the increasingly clear separation of logical from psychological issues. The earlier empiricists were primarily interested in problems about the analysis of concepts and the logical status of propositions, rather than psychological problems about the origin of ideas. Nevertheless, they were often confused about the questions they were debating and wrote as if their intention was to give a natural history of the mind. Hume and J. S. Mill, for example,

felt themselves to be committed to an atomistic psychology, which explained all mental activity in terms of the association of ideas. Modern empiricists, on the other hand, recognise that their philosophy is compatible with any psychological theory based on observation, and leave psychology to the psychologists.

The establishment of empiricism purely as a thesis about the logical structure of knowledge has been an important stimulus to the development of mathematical logic. It has also led to the conception of philosophy as the ANALYSIS of concepts and propositions, and therefore to an increased hostility to speculative philosophy and metaphysics. This hostility found its most extreme expression in the LOGICAL POSITIVISM of the VIENNA CIRCLE. The positivists held that apart from the formal or analytic statements of mathematics and logic, no statements were significant except those which could be verified by observation. Metaphysical and theological assertions were consequently rejected, not as unproved, but as 'nonsensical' or 'meaningless'. (E.B.)

Encyclopedists The first intention of the Paris printer and publisher Le Breton was to translate the English *Cyclopaedia* of Ephraim Chambers (1727), but when DIDEROT and d'Alembert became co-editors the scope was enlarged until it became the *Encyclopédie ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers* (1751–65). This great work in seventeen folio volumes was a monument to the erudition of the French intellectuals or *philosophes*, intended to provide information on every branch of knowledge, with special attention to the application of science to industry, trade and the arts.

Chief among the contributors was Diderot, who, besides having the general direction of the work, wrote an immense