

GLOSSARY

a fortiori

Latin: 'from the stronger'. It is used to mean all the more or even more so. For example, at the heart of the cosmological argument for God's existence is the ontological argument, and since this latter argument is deeply flawed, then a fortiori, the cosmological argument is rotten to the core.

a posteriori

Known on the basis of, or after, experience. For example, causes can only be known through experience and not independently of it. Propositions whose truth or falsity can only be known on the basis of experience are said to be a posteriori propositions.

a priori

Known to be true independently of, and therefore before, experience. For example, the propositions of mathematics and geometry, such as ' $2 + 2 = 4$ ' and 'All Euclidean (flat-plane) triangles have angles totalling 180 degrees', are known to be true by virtue of the meanings of the words they contain. They cannot be confirmed, or disconfirmed, by observation and experiment.

Aboutness

An informal term for mental states which exhibit **intentionality**, the feature of being directed upon, or being about, other states of affairs, including those that do not exist. In other words, intentional mental states, such as beliefs, dreams, desires and thoughts, represent the world as being in a certain way,

and thus possess representational content. For example, my belief that there are fairies at the bottom of my garden represents my garden as having fairies in it. Even though nothing in reality corresponds to this belief, that is what the belief is about. When the world is as the belief represents it as being, the belief is true.

Agential description

An agential description is one that characterizes someone's behaviour using mental terms, including those that describe the behaviour as an action performed by an agent. A non-agential description, by contrast, describes behaviour using only concepts drawn from physics and carries no implication that mentality is present. For example, 'He raised his arm' would be an agential description because it attributes an action, performed intentionally and chosen for a reason. By contrast, the description 'A human limb seen to move through intervening regions of space in such and such a way and over such and such a period of time', carries no implication as to whether an action was performed or not.

Ampliative

A term that is applied to **arguments** whose conclusions contain further information not found in their **premises**, and thus amplify what is to be found in those premises. **Inductive arguments** provide the standard case. For example, the conclusion that the sun will continue to rise because it has always risen in the past goes beyond our present evidence for this belief.

Analytical behaviourism

A form of reductionism that claims that all talk about mental states can be rendered, more perspicuously and without loss of meaning, into talk about actual and possible patterns of behaviour.

Analytical reduction

The basic idea behind analytical reduction is that talk about a certain class of things can be rendered, without loss of meaning, into talk about another class of things in a way that makes it clearer what is being asserted. For example, it has been proposed that talk about physical objects can be translated, without loss of meaning, into talk about actual and possible experiences that someone might have. Similarly, analytical behaviourism maintains that talk about the mind is translatable, without loss of meaning, into talk about actual and potential public behaviour. See also **ontological reduction**.

Argument

In philosophy, an argument is not a row, but an attempt to move rationally or logically from statements called '**premises**' in order to establish the truth of another statement called the 'conclusion'. There are two kinds of argument, deductive and inductive. In a **deductive argument** which is valid, the conclusion logically follows from the premises, so that if the premises are asserted and the conclusion denied, a contradiction results. The conclusions of **inductive arguments** do not logically follow from the premises but go beyond them in the sense explained under the entry '**ampliative**'.

Atomistic

Intentional mental states, such as beliefs and thoughts, are **holistic**. That is to say, they presuppose and entail a whole network of other intentional states and cannot occur in isolation. The belief that the dustman has not collected the rubbish, for example, entails all sorts of other beliefs, such as what day of the week it is, the existence of a rubbish collection service and so forth. By contrast, non-intentional states like sensations are atomistic in the sense that they can occur on their own and carry no implications for the existence of any other state of mind.

Bi-conditional

A bi-conditional is a statement that states logically **necessary and sufficient conditions** and takes the form 'if p then q , and if q then p ' where p and q stand for propositions. This is often abbreviated to ' p if, and only if, q ' or ' p iff q '. For example, 'if Martin is an only child, then he has no brothers and sisters and if Martin has no brothers and sisters, then he is an only child'. This may not sound very illuminating, but in the philosophy of mind an attempt has been made to find true bi-conditionals of the sort 'x is in mental state m if, and only if, his brain is in physical state p '. If this last statement were true, then mental states would be one and the same class of phenomena as brain states and the mental would effectively have been reduced to the physical.

Biological naturalism

This is a term associated with the philosophy of mind of the American philosopher John Searle. Mental states are a class of natural phenomena, namely biological phenomena. They do not lie outside the order of nature in a supernatural or non-natural world, but are as much a part of our biological history as processes such as digestion and the secretion of bile by the liver. There is an implication that mental states can be associated only with organic life-forms and not inorganic artefacts such as computers and robots.

Cartesianism

Broadly the set of doctrines and beliefs associated with René Descartes (1596–1650), but in the context of the philosophy of mind the **dualistic** doctrine that human beings are composed of two radically different kinds of thing, body and soul, capable of existing independently of each other but joined in life. The soul is non-physical and lacks extension, whereas the body possesses extension but lacks thought.

Causation

Causation operates where one event brings about, or necessitates or makes happen, another event. How the concept is ultimately to be analysed and understood is a major issue in philosophy. Hume proposed a famous analysis of causation that saw it as the constant conjunction of events – one type of event regularly following another – with no discernible connection or ‘glue’ to bind one to the other. Hume also suggested that ‘A causes B’ could be understood as saying that if A were not to occur, then B would not happen.

Cognition

Cognition refers to the operations of the intellect and understanding by means of which we arrive at knowledge and beliefs.

Computation/computational

The operations by a computer to carry out a sequence of defined operations in order, for example, to find the solutions to arithmetical or mathematical problems. The computer performs a series of discrete steps, called an algorithm, which require no insight or intelligence to be carried out. The computational theory of mind claims that the mind is best understood as a computer program run on the hardware (wetware?) of the brain. See in this connection **functionalism**.

Conation/conative

That aspect of the mind that is to do with acting, willing and trying.

Counterfactual conditional

A counterfactual conditional is a statement that takes the form ‘If *x* were to occur, then *y* would occur’ or ‘if *x* had not occurred, then *y* would not have occurred’. All true causal statements, including the laws of nature, entail counterfactuals, and are not mere statements of regularities. ‘The striking of the match on the box caused it to burst into flame’ entails ‘if the match had

not been struck on the box, all being equal, it would not have burst into flame' and 'if the match were to be struck on the box, all being equal, then it would burst into flame'. The point of the 'all being equal' clause is to rule out the operation of interfering causes, such as the matches getting wet, which would prevent the normal outcome of striking the match.

***De dicto* re necessity**

De dicto necessity is the kind of necessity that attaches to words, for example, that necessarily all bachelors are unmarried, or that necessarily $2 + 3 = 5$. *De re* necessity is the kind of necessity that relates to things. To understand this we need to use the terminology of possible worlds. Thus we can say that there is a possible world in which Clinton was never the President of the United States, but there is no possible world in which Clinton was not Clinton. Similarly, although there is a possible world in which Clinton was bald, there is no possible world in which he was not human. Charles Dodgson might not have written *Alice in Wonderland* in some possible world, but in every possible world he could not have been other than Lewis Carroll.

Deduction/deductive argument

In an **argument** that is deductively valid, the conclusion is logically entailed by the **premises** so that to advance the premises but deny the conclusion leads to a contradiction. This is because the information contained in the conclusion is already present implicitly in the premises.

Disjunction/disjunctive

A disjunctive statement is of the 'either/or' variety and states alternatives. There can be inclusive disjunctive statements – e.g. you can have either beer or cake or both – and exclusive disjunctions – e.g. you can have either beer or cake, but not both.

Disposition/dispositional

A dispositional property of a thing states how that thing would behave were certain conditions to be fulfilled. 'Solubility' is a dispositional property of sugar, that is to say that when immersed in water, for example, it will dissolve. Similarly, a person who has an irritable disposition need not actually be fuming and fussing, but is prone to do so in circumstances that would otherwise lead others of a more serene temperament to remain unruffled. See also **occurrent**.

Dualism/dualistic

Dualism takes two forms: substance dualism and property dualism. According to substance dualism, human beings are composed of two radically

different kinds of substance or things: non-physical minds and physical bodies, each capable of existing independently of the other. Property dualism postulates only physical substances but claims that these possess two radically different kinds of property: physical properties and non-physical mental properties such as consciousness. See also **non-reductive monism**.

Eliminativism

Associated particularly with the work of writers such as Richard Rorty and Paul and Patricia Churchland, eliminativism not merely denies there are such things as mental states, but advocates expunging all psychological and mental terms from our vocabulary, recommending that these are replaced by terms drawn from the sciences, especially computational and cognitive science.

Epiphenomenalism

Epi is the Greek for 'on top of', so epiphenomenalism literally means 'one phenomenon occurring on top of another'. The basic idea is that one phenomenon produces another which is dependent upon it, just as a suitably placed light and object cast a shadow on a wall. The behaviour of the shadow is dependent on the behaviour of the light and the object and cannot vary independently of the way they behave. The shadow is powerless to produce any alteration in the light and the object. In a similar fashion, it has been argued that physical processes in the brain produce and sustain mental states, but these states can have no effect on the brain processes upon which they depend, and are causally impotent to bring about any physical changes.

Epistemology/epistemological

Epistemology is the theory of knowledge and concerns itself with issues such as what is knowledge, how do we know, and can we know anything.

Existential and universal quantifiers

There are two quantifiers in logic, the existential quantifier ($\exists x$) that says 'there is at least one thing that is x . . .' and the universal quantifier strictly ($\forall x$) that says 'for all things that are x . ..'. These quantifiers are definable in terms of each other and they occur in the predicate calculus. For example, $(\exists x)(Fx \text{ and } Gx)$ says that there is at least one thing x such that it has the property F and the property G . Let F = 'is a man and' G = 'is bald'. Then this statement says that there is at least one man who is bald, i.e. some men are bald.

Functionalism/psycho-functionalism

Functionalism conceives of the mind as a function, run on the hardware of the brain, whereby sensory inputs are converted into behavioural outputs.

Metaphysical functionalism provides a purely conceptual philosophical analysis of the inputs and outputs which constitute a mental state – say, pain. Psycho-functionalism investigates empirically what actual neural mechanisms are involved in embodying and discharging the function. Functions are abstract in nature and cannot be strictly identified with the arrangements that happen to embody them, whether these comprise physical, or even conceivably non-physical states of affairs.

Holism/holistic

Holism is the feature whereby **intentional** mental states logically presuppose the existence of other intentional states, thus comprising a network or background. Unlike sensations that are non-intentional, intentional states cannot exist in isolation from each other. A possible analogy is with a jigsaw piece, which assumes the existence of the other pieces of the jigsaw. See also **atomistic**.

Homunculus fallacy

Homunculus (plural: *homunculi*) literally means ‘little man’ or ‘manikin’, and has come to denote the error in the philosophy of mind of attributing to some internal agent, either the brain or the soul, the very features the agent was invoked to explain in the first place. For example, in the children’s section, ‘The Funday Times’, of *The Sunday Times* there used to be a cartoon called ‘The Numbskulls’. The Numbskulls are a group of little men who lived inside the skull of ‘Uncle’ and explained how he was able to do various things such as seeing and thinking. A little man, for example, looked out of Uncle’s eyes and steered him round the world. Another little man in the brain, suggested various thoughts to him. The problem, of course, is how do these little men in turn see and think? Do they have yet smaller men inside them? Clearly, a vicious infinite regress threatens, in which case the explanation comes to nothing. Descartes committed the homunculus fallacy when he explained what it is for us to see by postulating that the person, conceived of as a ghostly soul, views images of the outside world projected onto the pineal gland in the middle of the brain.

Induction/inductive argument

An inductive argument is one in which the **premises** do not logically entail the conclusion, because the conclusion contains information beyond what is to be found in the premises. Such **arguments** are thus said to be **ampliative**. The typical form of an inductive argument is: ‘All the Xs observed so far have been Ys, therefore all the Xs there are, are Ys.’ We use this kind of reasoning a thousand times a day and it is clear that if we did not, there would be little beyond the data given by present experience which we could claim

to know. The problem of whether induction can be rationally justified, to which Hume (1711–76) first alerted us, remains a much-debated issue to this day.

Intentionality/intentional

Intentionality is the feature whereby many mental states possess a representational content. Some intentional states, such as beliefs, purport to represent how the world actually is. If the world is as a belief represents it as being, the belief is true, otherwise it is false. Other intentional states, such as desires and intentions, represent how the agent wants the world to be. Desires and intentions that do not succeed in bringing about the states of affairs at which they aim are frustrated or unfulfilled. See also **aboutness**.

Intrinsic and derivative intentionality

Many philosophers, of whom the American John Searle would be a prime example, have claimed that intentional states are intrinsic to brains and not derived from other intentional systems. Computer programs, by contrast, are not intrinsically about other states of affairs, and do not possess genuine underived intentionality. The contents of such programs exist only because we are there to interpret the programs. In a world devoid of minds, computer programs would lack a content, as would language, books and symbols in general. Two pieces of wood, formed into a cross, mean nothing in themselves. We invest such a structure with meaning, thereby turning it into the Christian symbol for the redemption of mankind by Christ.

LAD (language acquisition device)

The American linguist, Noam Chomsky, claimed that learning theory which is founded upon stimulus/response psychology cannot explain how children acquire language so quickly, nor their ability to understand and to generate an indefinite variety of sentences and constructions they have never encountered before. To explain this, he postulated a LAD, a language acquisition device, incarnated in the neural machinery of the brain, which embodies an innate universal grammar, not learned from experience, that provides the rules the child needs to recognize and classify the different examples of utterances which it encounters. In this way, the child quickly learns what utterances are meaningful, and which are to be discarded.

Leibniz's Law

Leibniz's Law, formulated by the great German philosopher Gottfried Leibniz (1646–1716) is also known as the 'identity of indiscernibles'. It states that if an object, X, is one and the same thing as an object, Y, then all the

properties of X must be the same as all the properties of Y. Hence, if X possesses at least one property lacked by Y, and vice versa, then X and Y cannot be numerically identical, i.e. one and the same. Leibniz's Law is a useful tool for evaluating identity claims. For example, if mental states are identical with brain states, then all the properties of mental states must be possessed by brain states, and vice versa. If just one property can be found that is possessed by a mental state but not a brain state, and vice versa, then mental states cannot be brain states. There are exceptions to Leibniz's Law. It will not work, for example, with verbs that denote intentional mental states. It may be true that Lois Lane is imagining she is kissing Superman and not imagining she is kissing Clark Kent (so something is true of Superman but not Clark Kent), but this cannot establish that Superman is not Clark Kent (we know full well that he is).

Logical positivism

Logical positivism was associated with members of the Vienna Circle which flourished between, approximately, 1924 and 1936. The logical positivists were much concerned with the unity of science and scientific method. A central aim was to formulate a criterion that would demarcate meaningful utterances from meaningless ones, and this led to formulation of the **verification principle**, according to which a statement was meaningful if, and only if, it could be verified in principle on the basis of experience. Later, under the pressure of criticism, the verification principle transmuted into the falsification principle, according to which a statement was devoid of literal meaning unless it could in principle be falsified empirically.

Materialism/physicalism

According to materialism, all that really exists are physical objects and physical phenomena. Mental states, ultimately, are nothing over and above physical states of affairs, including properties.

Mental phenomena

Mental phenomena comprise states of mind, including mental happenings and processes. A prime example of a mental state is consciousness, and consciousness, in different sorts of ways, appears to be integral to the existence not only of non-intentional states such as sensations and moods, but also of the vast panoply of intentional states such as beliefs, thoughts, desires and emotions.

Metaphysics

Metaphysics raises questions about the nature of existence which lie beyond the scope of the sciences. Typical questions in metaphysics are: what is the

nature of causation? What is the mind, and how does it differ from, and relate to, the body? What constitutes the identity of a person over time? What is the difference between things and their properties?

Monism

Monism is the view that only one type of thing exists. Materialistic monism maintains that the sorts of thing which exist are physical in nature. Immaterialistic monism maintains the opposite: only spiritual substances, i.e. non-physical souls and their properties, exist.

Naturalism

The view that everything that exists is part of the natural world and explicable in terms drawn from the natural sciences, such as physics, chemistry and biology.

Necessary and sufficient conditions

This is best explained by means of an example. A necessary condition of being a bachelor is that the person in question is male. But this is not sufficient, because a newly born male infant is not a bachelor. What more needs to be added is that, firstly, the person in question is of marriageable age and, secondly, that he has not been married before. These two conditions, together with maleness, are logically necessary and sufficient to comprise bachelorhood. Consider now the notion of sufficient condition. A sufficient condition of being a British citizen is that one was born of British parents in Britain. But it is not necessary, since citizenship can also be acquired in other ways, such as by marriage. See also **bi-conditional**.

Nomological

From the Greek *nomos*, i.e., law. Thus, nomological is 'law-like'.

Non-intentional mental states

These are mental states such as sensations and moods, which are not about, or directed upon, a content, so that they do not represent other possible states of affairs, unlike intentional states. Non-intentional states are **non-holistic**.

Non-reductive monism

Non-reductive monism maintains that only physical entities exist, but these possess both physical and non-physical mental properties, the latter resisting reduction to the former. Property-**dualism** is an example of non-reductive monism.

Normative

Governed by rules or standards.

Occasionalism

The doctrine of the mind/body relation associated with the French philosopher Nicholas Malebranche (1638–1715). Malebranche held that the mind, conceived of as a non-physical soul, has no causal commerce with the material body, but that when mental and physical events occur, God is present on every occasion – hence the title of the doctrine – to ensure that the right sorts of correspondence between the mental and physical occur, so that it is as if they affected each other. Malebranche adopted the doctrine to get round the Cartesian problem of how physical and non-physical things could possibly have any effect on each other.

Occurrent

Occurrent mental states are those that are currently present to consciousness – for example, the ache in my shoulders I am experiencing at this moment. Occurrent states contrast with **dispositional** states, which manifest themselves when certain conditions are fulfilled. My beliefs are dispositional in the sense that I am not currently conscious of them, but I can call them to mind if and when the occasion demands, in which case they become occurrent.

Ontology/ontological

The branch of metaphysics which concerns itself with the nature of what exists.

Ontological reduction

An ontological reduction contrasts with an **analytical reduction**. An analytical reduction maintains that talk about one sort of thing can be rendered in different words without loss of meaning. Thus, talk about triangles can be translated, without loss of meaning, into talk about three-angled figures. The two kinds of talk are equivalent in meaning. An ontological reduction never maintains that descriptions of a phenomenon and the analysis of it are equivalent in meaning, but only that the terms which figure in the analysis constitute all the facts about the phenomenon which is being ontologically reduced. Thus, talk about heat is not analytically reducible to talk about the behaviour of molecules – the two kinds of talk have irreducibly different meanings – but nevertheless there are no heat facts at the macro-level over and above behaviour of molecules at the micro-level.

Ostensive definition

An ostensive definition is one that takes place by pointing. Not all words can be defined purely in terms of other words. There must come a point where a term has to be defined by pointing at the non-linguistic state of affairs to which it may be applied.

Personal identity

The central question is: what makes a person X at the present moment one and the same as a person Y in the past? The request is for the **necessary and sufficient conditions** of the numerical identity of the person over time.

Phenomenalism

Phenomenalism is a species of **analytical reduction** and tries to render all talk about physical objects in terms of actual and possible experiences.

Physical phenomena

It is extremely difficult to define physical phenomena, but one would expect them (1) to be publicly available in theory to all subjects of experience; (2) to be spatially located and to occupy a volume or area of space; (3) to exist independently of all observers; (4) frequently to be measurable and quantifiable. Natural objects, human artefacts, phenomena such as light, gravity, magnetism, mass, solidity and so forth are typical examples of physical phenomena.

Physicalism

Physicalism is very close to **materialism**, and maintains that everything that exists is physical. It often makes the additional claim that the only genuine explanations of events are physical explanations, and the only proper concepts are physical concepts.

Plato/Platonic

Plato was born in Athens in c.428 BC and is most famous for his writings on ethics and his theory of Forms. According to this theory, the real world, what might be called Platonic Heaven, is a world of universal characteristics – universals – which are perfect, unchanging and eternal, known only through intellectual acquaintance after training in mathematics, geometry and philosophy. The world we see around us is an imperfect, changing evanescent world of particulars perceived by the senses. Particulars are made to be the kinds of thing they are by sharing in the nature of the Forms, or by being

imperfect copies or reflections of them. Knowledge is acquaintance with the non-sensory Forms, belief acquaintance with sensory particulars. Plato also espoused **dualism**, and thought that the nature of the soul was similar to that of the Forms.

Premise

A premise is a statement supporting a conclusion and is supposed to lead to it. In valid **deductive arguments**, the premises of the **argument** logically entail the conclusion.

Psycho-physical causation

Mind-to-body causation. In other words, mental states act as causes to bring about bodily behaviour. There is still a puzzle as regards what mental states must be like to be able to do this. **Materialists** and **physicalists** straightforwardly hold that mental states must ultimately be physical in nature, but there are serious difficulties in reducing the mental to the physical as this leaves out consciousness and **qualia**.

Psycho-physical parallelism

This theory, invented by Leibniz, was designed, like Malebranche's **occasionalism**, to avoid the problem posed by **Cartesian** dualism, namely how it is possible that a non-physical soul (mind) can affect the physical body, and vice versa. Mental events and physical events run parallel to, and are synchronized with, each other. This is because God, who winds up the mind and body clocks, synchronizes the right kinds of mental event with the right kinds of physical event, and then sets the clocks ticking. Unlike Malebranche's God, Leibniz's does not have to be around on each and every occasion to make sure the appropriate mental/physical correspondences obtain.

Qualia

Qualia comprise the felt or phenomenological aspects of experience, such as the itchy feel of a blanket, the dull ache of cramp or the vivid green and golden of a field of young rice. Qualia are supposed to be subjective and private to the individual person, and exist in addition to public, physical events in the brain and central nervous system.

Ramsey sentence

Invented by the Cambridge philosopher Frank Plumpton Ramsey (1903–30), the aim of a Ramsey sentence is to eliminate circularity in analyses of phenomena. For example, to avoid defining an item like 'positive charge' in terms of its opposite 'negative charge', and vice versa, the way out of the

circle is to talk about both charges more neutrally and without commitment, by saying there is something that has property F and there is something that has property G; things with F attract those with G and repel things with F, while things with G attract things with F and repel things with G; and G can be induced in a rubber comb by rubbing it with wool.

Reify/reification

To reify an item is to treat it as a thing. This usually occurs because of the mistake of thinking that all nouns acquire their meanings by naming things, but quite often this is a mistake. The word 'pain' is a noun, but is a pain a thing? Rather, we should think of it as some state or condition of a person. Similarly, is the meaning of a word an object, or is it better thought of, as Wittgenstein suggested, as the use of the word? The noun 'body' names a thing, but need this be true of the noun 'mind' contrary to what substance dualists maintain.

Res cogitans

A thinking thing, from the Latin *res*, 'a thing', and *cogitans*, 'thinking'. This was how Descartes characterized the mind or soul. It is a thing whose whole essence is to think. By thinking or, in French, *penser*, Descartes meant consciousness in general, and not mere intellection or ratiocination.

Res extensa

An extended thing, i.e. physical, space-occupying bodies. Descartes divided the whole universe into the two mutually exclusive realms of *res cogitans* and *res extensa*.

Semantics and syntax

Semantics is the study of the meaning of statements and how it is possible. Syntax is the study of the language structures by means of which statements get made.

Solipsism

The view that only oneself and one's experiences exist. A weaker version would add 'as far as one can tell'.

Substance/logical substance

A substance is a thing that can exist in its own right, in logical independence from anything else, unlike properties, which have to be the features of some substance or other. However, just as properties must belong to substances, it

would equally seem that there cannot be featureless or propertyless substances. Substances and properties were made for each other. It is a marriage made in metaphysical heaven, which no philosopher can put asunder. Some philosophers, e.g. Spinoza (1632–77), have maintained that, strictly speaking, God is the only genuine substance, because God, unlike all else, does not depend for his existence on anything external to him.

Supervenience/subvenience

A supervenient phenomenon arises from, and depends for its existence upon, a subvenient base. Moreover, there can be no changes in the supervenient phenomenon with a corresponding change in the subvenient base, but the converse does not apply, owing to the possibility of the multiple realization of the supervenient phenomenon by a variety of subvenient bases. The exact nature of the supervenience relation is controversial.

Syllogism

A syllogism is a form of deductive inference in which a conclusion is drawn from two premises. For example, ‘All fish live in water’, ‘All things that live in water are cold-blooded’, so ‘All fish are cold-blooded’. Each premise contains an expression, which occurs in the conclusion, and an expression, called the ‘middle term’, which doesn’t. In this case, the middle term is ‘live in water’. There are four basic forms of statement that can figure in syllogisms: These are: ‘All A are B’, ‘No A are B’, ‘Some A are B’, and ‘Some A are not B’. There are 256 ways in which these statements may be combined, but only 14 of these combinations represent valid arguments, i.e. arguments where the conclusion logically follows from the premises.

Tautology

A tautology is a kind of necessary truth because it merely repeats itself. For example, the line ‘A rose is a rose is a rose’ (by the poetess Gertrude Stein) is a tautology.

Verificationism/verification principle

Verificationism is a central doctrine of the **logical positivists** which maintains that unless a statement could be verified empirically, i.e. established as true in principle on the basis of experience, it is devoid of meaning. (This did not apply to necessary truths and falsehoods.) The problem is that there are all kinds of statements that cannot be verified and yet are meaningful – e.g. a city will never be built on this spot (an example given by the American philosopher, Hilary Putnam). In addition, how is one supposed to verify the verification principle itself – by observation or experiment? The cardinal error made by the principle is that whilst it must be possible to specify what

state of affairs, if it occurred, would make a statement true if that statement is to be meaningful, it is entirely another matter to be able actually to find out, even in principle, whether that state of affairs obtains. There may be all kinds of statements whose truth we will never be able to discover, even in principle, but that does not make them meaningless.