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for the uniformity of nature is that nature was the result of design by an intelligent being. And if we admit that, then the being who designed the laws of nature can suspend them (see MIRACLES).

A number of Lewis' arguments for God exhibit the same pattern: a fact of experience is vividly described, then explained by Christian theism. For example, our experience of recognizing the claims of morality and at the same time failing to meet those demands is explained by a God who is the source of morality and a human race estranged from that God (see RELIGION, HISTORY OF PHILOSOPHY OF §5). Or our experience of longings which can be satisfied by no finite object, but which seem to indicate a real need calling out for a real object can be best explained by a God who is our final good. On Lewis' view, attempts to explain these facts of our experience without bringing in God lead to our explaining them away.

Lewis also gives an argument which has been called the 'Lewis trilemma' (see 'The Shocking Alternative' in *Mere Christianity*). He argues that the claim by Jesus to be God cannot be separated from the New Testament accounts of his life and work; for example, his claim to forgive sins on his own authority could only be made by God. Lewis then poses three alternatives: Liar, Lunatic or Lord. But Jesus is recognized by almost everyone as a great moral teacher: could such a teacher lie or be subject to an insane delusion? Lewis concludes that seeing Jesus *only* as a great moral teacher is not a possibility left open by the evidence; he must be more or less than this.

See also: GOD, ARGUMENTS FOR THE EXISTENCE OF

List of works

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RICHARD L. PURTILL

LEWIS, DAVID KELLOGG (1941–)

David Lewis has made extremely important and influential contributions to many topics in metaphysics, philosophical logic, the philosophy of science, the philosophy of mind, the philosophy of language, the philosophy of probability, rational decision theory, and ethics and social philosophy. His work on counterfactuals and the philosophy of modality has been especially influential.

1 Life
2 Counterfactual conditionals
3 Modality: logic and ontology

1 Life

David Kellogg Lewis was born on 28 September 1941 in Oberlin, Ohio, where his father taught government at Oberlin College. His mother, a historian, did some teaching for the college, but did not hold a regular appointment. Lewis attended Swarthmore College, from which he received a BA in philosophy (high

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honours) in 1962. His postgraduate studies were at Harvard, where he received an MA in 1964 and a Ph.D. in 1967. He served as Assistant Professor of Philosophy at UCLA from 1966 to 1970, and has since taught at Princeton. Lewis has for many years had a special relationship with Australia, where he has spent two or three months of every year, usually without formal academic appointment, since 1979. In September 1995 he was awarded an honorary doctorate by the University of Melbourne.

2   Counterfactual conditionals

In 'A Theory of Conditionals' (1968), Robert Stalnaker proposed the following semantical analysis of counterfactual conditionals: the counterfactual having antecedent p and consequent q ('$p \rightarrow q$') is true if and only if either p is impossible or q is true in the possible world closest to actuality in which p is true (or 'q is true in the p-world closest to actuality'). (Stalnaker's analysis assumes that for any possible world w and any possible proposition, there is a unique world that is the closest world to w in which that proposition is true.) One important consequence of this analysis is that any sentence of the form '$(p \rightarrow q)$ or $(p \rightarrow \text{not-}q)$' – for example, 'If Lincoln had not been assassinated, Hitler would (still) have invaded Poland in 1939, or else if Lincoln had not been assassinated, it would not have been the case that Hitler invaded Poland in 1939' – must be true. Lewis proposed an alternative analysis (1973a), which replaces the second disjunct of Stalnaker's analysis with the condition that there is some world w in which both p and q are true, such that every p-world at least as close to actuality as w is also a q-world.

On reflection, it seems that a counterfactual with a possible antecedent can be true even if there is no one closest world in which that antecedent is true. Suppose, for example, that there are two or more p-worlds that are equally close to the actual world, that all worlds closer to actuality than these are not-p-worlds, and that q is true in all these 'tied' p-worlds. It seems evident that $p \rightarrow q$ is true in this case. Lewis' analysis entails that a counterfactual is true if its antecedent and consequent are so related, and it avoids the counterintuitive consequence that '$(p \rightarrow q)$ or $(p \rightarrow \text{not-}q)$' is a valid sentence-schema. For these reasons, it would be generally conceded that the logic of counterfactual conditionals that is generated by Lewis' semantics is much more intuitive than the logic that is generated by Stalnaker's semantics; most philosophers of logic, in fact, would probably be willing to say that Lewis' logic is the correct logic of counterfactuals.

There would be less agreement about the value of

Lewis' informal, philosophical account of the basic items in his semantics: possible worlds and the 'closeness' relation. Lewis' idiosyncratic account of 'possible worlds' will be examined below. His account of 'closeness' is given in terms of comparative similarity – the concept illustrated by the comparison 'San Francisco is more like Boston than it is like Calcutta'. According to Lewis, the worlds closest to w are the worlds most similar to w. There has been considerable controversy about whether Lewis' truth-conditions for counterfactual conditionals are correct if closeness is understood in terms of similarity (see COUNTERFACTUAL CONDITIONALS).

3   Modality: logic and ontology

Possible worlds are at the centre of Lewis' philosophy of modality. By the late 1960s it had become common to appeal to 'possible worlds' in discussions of modality. But many philosophers doubted whether any coherent philosophical sense could be made of the notion, particularly if each 'possible world' was to be associated with a well-defined set of individuals, those existing in it. By what criterion, it was asked, could an individual existing in one world – say, Quine's 'as he is in the actual world' – be judged identical with an individual existing in some other world and having a set of properties very different from Quine's?

Some philosophers think of possible worlds as abstractions of some kind, perhaps as internally consistent and 'complete' stories, the actual world being the one that is true. Such philosophers reply to sceptics about the intelligibility of 'cross-world identity' in this way: Quine can 'turn up in' various stories, stories both true and false, even if the false stories ascribe to him properties very different from the properties ascribed to him by the true stories. According to Lewis, however, a world is no mere story. A world is a spatiotemporally connected and closed object (or at least an object closed under some relations that, like spatiotemporal relations, are 'external'). For Lewis, a world is a very substantial thing indeed: our cosmos is one of them, and the others differ from it 'not in kind but only in what goes on at them'. A 'possible object' like Quine is 'in' a world if it is a part of it, and no possible object is a part of more than one world. Lewis' answer to the sceptics is therefore that Quine is simply not identical with anything in any other world.

The totality of worlds, Lewis maintains, is a 'logical plenum'; there is a world for every possible arrangement of things. (He is able to state this requirement without the use of any modal terms.) Although we rightly single out one member of the logical plenum as

'the actual world', there is in an important sense nothing special about it, for 'actual' is simply an indexical term like 'now' and 'here'.

Most philosophers have found the ontology that underlies Lewis' account of modality incredible. Many doubt whether there are any 'worlds' besides our own cosmos. Many wonder how Lewis knows that, even if there are other worlds, they are numerous and various enough to form a logical plenum. Many wonder why Lewis thinks that, given that there are all these 'worlds', they have anything to do with modality, or why each of them would be, as Lewis says each of them is, a 'way things could have been'. Another sort of worry, one that can perhaps be more profitably discussed, is closely related to Lewis' answer to the sceptics about cross-world identity: how can Lewis accommodate our convictions about 'modality *de re*'? No doubt Quine could have been a geographer. In the language of possible worlds, there is a world in which Quine is a geographer. But, the worrier points out, if Lewis is right, Quine is not in any world but our own (see DE RE/DE DICTO).

Lewis replies that, although Quine is not in any other world, there are people in some other worlds who play the same role in their worlds that Quine plays in his (our) world – who are the people in those worlds who are the most similar to Quine. If there are people in the world *w* who enjoy this status, they are the counterparts of Quine in *w*. (But since the question, 'Which things are most similar to *x*?' is a pragmatic question, one that can be answered in various ways depending on one's interests, there is no unique 'counterpart relation' – no one relation that is expressed by '*x* is a counterpart of *y*'.) Lewis analyses modal statements *de re* by reference to the counterparts of the *res* they concern: to say that Quine could have been a geographer is to say that he has a counterpart who is a geographer. This analysis has been disputed on the ground that Quine's counterparts are not, after all, Quine; therefore, it is urged, no statement about their features could be equivalent to any statement about what he could have been. Lewis replies that the property 'could have been a geographer' is the property 'has a counterpart who is a geographer'. If, therefore, Quine has a counterpart who is a geographer, Quine has the property 'could have been a geographer'. But this reply requires a qualification. Since there is no one counterpart relation, there is no one property that is expressed by 'could have been a geographer'. Whether we are willing to say that Quine could have been a geographer is, in consequence, a function of the interests that we bring to our discussions of how Quine could have been different.

In 'Counterpart Theory and Quantified Modal Logic' (1968), Lewis presents his thoughts about counterparts and modality in a very general form. He presents an extensional first-order language whose primitive nonlogical vocabulary comprises only predicates – for example, '*x* is a possible world', '*x* is a counterpart of *y*' and so on – and he embodies his theory of counterparts ('Counterpart Theory') in eight axioms stated in this language. He presents an algorithm for translating sentences of quantified modal logic into this language. He goes on to make some illuminating observations about quantified modal logic by showing that certain 'famous' problematical sentences in the language of quantified modal logic correspond under the translation algorithm to theorems, and certain others to non-theorems, of Counterpart Theory; he shows that if various formal restrictions were placed on the counterpart relation – restrictions that would in his view be arbitrary – the theorems that would thereby be added to Counterpart Theory would be translations of certain of the 'famous' sentences of quantified modal logic. He shows, finally, that, although all sentences in the language of quantified modal logic can be translated into his extensional language, the converse does not hold. The latter is therefore a richer language: it has all the expressive power of the language of quantified modal logic and more besides.

An important feature of Lewis' account of modality is that, unlike most other accounts of modality, it is reductive. If Lewis is right, modal terms can be eliminated from our discourse in favour of spatiotemporal terms, 'part', and an indexical term like 'we'. (It is, moreover, arguable that if one accepts Lewis' modal ontology, one need include in one's ontology no non-individuals, but sets ultimately grounded on individuals. Propositions, for example, can be identified with sets of worlds, and properties with sets of the things in them.) Whether or not those who find Lewis' modal ontology incredible are right so to regard it, it is undeniable that a lot more can be done with it than with any other modal ontology. We have seen that it provides a reductive analysis of modality. We have not been able to discuss its astounding successes – granting only its truth – in dealing with a very wide range of philosophical problems. (The philosopher John Perry has remarked that it 'goes through philosophical problems the way a McCormick reaper goes through wheat'.) Perhaps the same feature of the ontology – the vast range of spatiotemporal objects it assumes – accounts both for its extraordinary power and the 'incredulous stares' that have been so often directed at its inventor. Lewis does not dispute the validity of the maxim 'Entities are not to be multiplied beyond necessity', but he insists that, once the content and consequences of a

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See also: MODAL LOGIC; MODAL LOGIC, PHILOSOPHICAL ISSUES IN

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—— (1986c) *On the Plurality of Worlds*, Oxford: Blackwell. (A sustained exposition and defence of Lewis' ontology of possible worlds.)

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* Stalnaker, R. (1968) 'A Theory of Conditionals', in *Studies in Logical Theory*, ed. N. Rescher, Oxford: Blackwell. (The paper which started current debates on counterfactual conditionals.)

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Chapter 3, Stalnaker gives an alternative to Lewis' account of possible worlds, and in Chapter 7 he responds to Lewis' criticisms of his theory of conditionals.)

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PETER VAN INWAGEN

LI

Li means 'pattern' or 'principle', and as a verb can also refer to the creation of orderly pattern. Mencius believed that the human heart–mind had an inherent taste for and attraction to such 'good order'. His contemporary, Zhuangzi, was the first to use li *to refer to an underlying normative 'pattern' structuring and giving order to the entire world. This sense in turn influenced the Confucian thinker Xunzi, who employed and developed the concept to express his understanding of Confucianism. Certain Buddhist thinkers used the notion of* li *to describe first 'emptiness' and later 'Buddha-nature', the common underlying characteristic of all phenomena. A version of this idea was adopted by neo-Confucian thinkers, who believed that while each thing manifested its own particular* li, *it also contained within it the* li *of all other things. Thus there is a profound metaphysical identity between self and world.*

The earliest and most basic sense of the character *li* ('pattern' or 'principle') is derived from the simpler graph which serves as its central component: a rectangular field divided into equal quadrants to form an 'orderly pattern'. As a verb, *li* has the related meaning of creating such a pattern, thus 'to set in good order'.

The Mohists were the first Chinese thinkers to use *li* with a distinctly philosophical sense (see MOHIST PHILOSOPHY). In the *Mozi*, *li* is used to mean 'good order' (for example, in Chapter 25 it is opposed to 'chaos'). In later Mohist writings, *li* means the principles governing such order and orderly principles of thought (Graham 1978: 192). These two senses of 'good order' are both present in *Mencius* 6A7, which claims that all human minds agree in approving of *li* (good order) and *yi* (what is right).

The most important and extensive early uses of *li* occur in the *Zhuangzi*. There, *li* appears both in the sense of the grand pattern underlying all phenomena and the individual instantiations of this pattern in discrete things. The *Zhuangzi* contains the first

occurrences of 'heavenly principles', 'principles of the Way' and 'great principles', terms which connect the notion of 'pattern' to a greater cosmic scheme, lending it a wider metaphysical role and greater normative force. Being explicitly linked to 'Heaven' and the 'Way', *li* describes not only how things are but also how they should be. We also see several references to 'the principles of the myriad things' and in one case to 'the various principles of the myriad things', ideas that prove important in neo-Confucian thought (see ZHUANGZI).

XUNZI was deeply influenced by these new senses of the term and incorporated them into his Confucian philosophy. Formally, his views are remarkably similar to those in the *Zhuangzi*, but their content – what he claimed to be the underlying pattern of the cosmos – was significantly different. Xunzi's ideal was a consciously anthropocentric harmony between human needs, desires and capacities, and Nature. Zhuangzi's vision lacked this human centre; he focused on 'heavenly principles', a term which does not appear in Xunzi's writing.

The view that *li* provides both a descriptive and normative pattern for individual things, while also being part of a larger cosmic pattern, gave rise to the idea that this larger pattern 'united' the various phenomena of the world. This idea can be found in Han dynasty texts such as the HUAINANZI. It was most developed by thinkers such as Wang Bi, who speaks of 'ultimate principle' as an object of mystical contemplation and religious veneration. His contemporary Guo Xiang, who held similar views, also believed that the 'pattern' of the world was not the result of some predetermined plan but rather of 'spontaneous' processes. He insisted that the ultimate nature of the world was *wu* (non-existence) (see YOU–WU).

Chinese Buddhists adapted these later senses of *li* to express their own views. In the *Sutra in Forty-two Sections*, *li* is used to mean 'the true nature of reality', a full appreciation of which will result in complete enlightenment. ZHI DUN developed the equation of *li* with *wu* 'non-existence', understanding both in the Buddhist sense of 'emptiness'. Huayan Buddhists understood the 'emptiness' of reality – the lack of an independent, individual nature – to mean that all things are manifestations of a shared 'Buddha-nature'. Huayan works, such as the *Treatise on the Golden Lion*, argue that every 'phenomenon' contains within it all the various *li* (see BUDDHIST PHILOSOPHY, CHINESE; BUDDHIST CONCEPT OF EMPTINESS).

Like Huayan Buddhists, neo-Confucians believed that *li* describes the fundamental character of reality and that the spiritual life lies in grasping this shared, unifying principle. CHENG YI was famous for the idea

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